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Technical creativity and technical skills as a source of pupils' physical and psychological balance¹

Technical education, the important condition of which is the development of technical skills, technical creativity, as well as technical thinking, is also meant to ensure the physical and psychological balance of the learner's personality. The contribution, which is the output of the project VEGA no. 1/0550/22, includes presented research findings reporting that the state of a pupil, student or a teacher developing their thinking, skills, and creativity and demonstrating a positive relationship with the content of technical education in all areas of development, creates the environment of a physical and psychological balance of the learner as well as prevents risk behaviour. The research uses a set of research methods (original questionnaire, interviews, pre-test, test, post-test, and others) implemented on a sample of 86 examined respondents showing a statistical significance among the examined variables.

Key words: technical education, pupil, teacher, primary education, cognitive skills, physical and psychological balance, prevention of risk behaviour

Słowa kluczowe: edukacja techniczna, uczeń, nauczyciel, edukacja na poziomie podstawowym, umiejętności poznawcze, równowaga fizyczna i psychiczna, zapobieganie zachowaniom ryzykownym

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Kreatywność i umiejętności techniczne jako źródło równowagi fizycznej i psychicznej uczniów

Edukacja techniczna warunkuje rozwój umiejętności technicznych, kreatywności technicznej, myślenia technicznego, ma również wpływ na zapewnienie fizycznej i psychicznej równowagi osobowości uczącego się. W artykule zaprezentowano dorobek badań przeprowadzonych w ramach projektu VEGA nr 1/0550/22, z których wynika, że kształcenie techniczne rozwija u ucznia, studenta, nauczyciela twórcze myślenie, umiejętności i kreatywność, a treści kształcenia technicznego mają pozytywny wpływ na wszechstronny rozwój, tworzą środowisko równowagi fizycznej i psychicznej ucznia oraz zapobiegają zachowaniom ryzykownym. W badaniu wykorzystano zestaw metod badawczych (kwestionariusz autorski, wywiady, pretest, test, posttest i inne) na próbie 86 respondentów wykazujących statystyczną istotność badanych zmiennych.

Introduction

With an appropriate, comprehensive and high-quality approaches to both content and learning processes in fulfilling the educational objectives, the individual reaches balance of the rational and emotional, as well as the material and spiritual aspect of their life. The teacher, who provides education for future generations, and improves the quality of life in order to achieve a sustainable world, plays an important role in this process².

The teacher is one of the significant people in the life of children, who, both positively and negatively, influences the formation of their personality through their educational agency, presence, and communication. The teacher plays an important role in the life of the pupil, especially in the early years of education. During the younger school age, the teacher becomes an authority whose actions the pupil does not doubt. The influence of the teacher and their authority subsides in the 10th year of the pupil's life, when it is replaced by the authority of the group³. The teacher is expected not only to educate pupils, but also to raise them, develop their interests and abilities, and shape their attitudes and character. The teacher does so, based on the constant process of getting to know their typological and individual differences⁴. How the teacher reacts to the pupil, what their behaviour towards the pupil is, and what attitudes they develop towards the pupils also depends on

² M. Gařparová., Z. Huřová, *Rozvíjanie technických zručností žiakov cez tradičné ľudové remeslá v regionálnej výchove*, "Inovace a technologie ve vzdelávaní" 2019, no. 1, pp. 144–151.

³ I. Jakabčič, *Základy vývinovej psychológie*, IRIS, Bratislava 2002, p. 83.

⁴ J. Čáp, J. Mareš, *Psychologie pro učitele*, Portál, Prague 2001, p. 655.

how they perceive the pupil and what impression of them they create⁵. According to Adamik-Šimegová and Kováčiková⁶, in addition to professional methodological preparation for teaching, the teachers are currently also required to possess competences through which they can resolve everyday problems and conflicts of pupils, and allow them to manage their emotions or affections. Therefore, the teacher's task is to understand, through social perception, how the pupil reacts in a particular situation, what they experience, why they react in the way they do and not differently, and to know what the pupil's qualities are. Boroš⁷ draws attention to the external as well as internal characteristics of the pupil, and to their more permanent dispositions and situational expressions. Social perception is a process in which each of its participants creates a picture of the other, which then becomes very lasting. It is a process that takes place at lightning speed, instantly, and spontaneously. It should be remembered that pupils react differently to the same initiative of the teacher. Taking into consideration that the teacher has to assess the behaviour of pupils on a daily basis and subsequently decide on the future educational procedure, means that the teacher shows a significant need to do everything possible in order to apply the principle of individual approach⁸.

The role of the teacher in developing creativity and regulating pupils' inappropriate behaviour

According to Kačáni⁹, when getting to know the pupil, the teacher might encounter problems such as individuality and variability, self-regulation of behaviour, i.e. the manifestations of pupil's behaviour can be influenced by the fact that they behave in a way that meets the teacher's expectations. Another problem may be the one-sided assessment and evaluation of pupils, which means that the teacher focuses on the exploration of one extreme characteristic trait of the pupil while not noticing the other positive ones. Getting to know pupils is also influenced by emotional ties. For instance, showing affection means that the teacher perceives them more positively, whereas showing aversion signifies that they attribute several negative qualities to them. The teacher's process of getting to know the pupil also affects their current mental state.

⁵ M. Flešková, *Sociálna percepcia, ako vníma učiteľ žiaka*, in: *Pedagogické a psychologické problémy osobnosti žiaka*, Matej Bel University, Faculty of Education, Banská Bystrica 2011, p. 176.

⁶ M. Adamik-Šimegová, B. Kováčiková, *Kognitívne, emocionálne a morálne aspekty školského šikanovania a ich využitie v prevencii šikanovania na základnej škole*, Trnava University, Trnava 2011, p. 303.

⁷ J. Boroš, *Základy sociálnej psychológie*, IRIS, Bratislava 2001, p. 227.

⁸ V. Kačáni et al., *Základy učiteľskej psychológie*, SPN Mladé letá, BA 2004, p. 230.

⁹ Ibidem.

Kariková-Oravcová¹⁰ report that a teacher encounters many problematic pupils in their daily practice. One of the most difficult aspects of a teacher's work is working with pupils who have inappropriate behavioural expressions. There are teachers who treat such pupils as problematic and perceive them as those going through a difficult time, or those that feel hurt as a result of their failures at school, which induce feelings of anxiety by undermining their self-confidence. These problems are sometimes accompanied by a family situation. That is why these pupils need teachers who do not highlight and publicly point out their inappropriate behaviour, and who do not feel threatened by such behaviour and are able to approach the pupils positively and with confidence. With such attitudes, the teacher makes it clear to the pupil that they understand their problems, that they are there to help them, and to express that they consider them to be able to develop their skills and abilities.

The diagnostic, control and evaluative roles of the teacher are, therefore, important for developing the pupil's personality during the educational process. The teacher gradually collects information about pupils' development, as well as monitors their behaviour, attendance or extracurricular activities. On the basis of a well-defined diagnosis of individual pupils following the observation of the structure of the collective and relationships in the classroom, the teacher sets a prognosis for the pupils' future development. For the teacher, it is essential to know the diagnostic methods at their disposal. Viřňovský – Babicová¹¹ consider observation, interview, questionnaires, surveys, analyses of written and oral expression, medical history, sociometric methods and others, to be the most important methods of getting to know pupils.

Babiaková et al.¹² states that systematic process of getting to know pupils and recording the characteristics of their behaviour helps the reader find corrections of inappropriate behaviour and poor relationships between pupils. It further allows the teacher to search appropriate solutions, whether by finding a positive result or by determining possible measures. The teacher plays an important role in preventing pupils' inappropriate behaviour. If the teacher finds out that a pupil behaves differently without a reason, loses interest in school, is apathetic, or, conversely, has periods of increased activity that have not been typical for them, and ceases to devote time to their interests, the teacher should pay close attention to the pupil and take note of these manifestations, as well as of the frequency at which they repeat. The teacher should invite parents to discuss the possible

¹⁰ S. Kariková, J. Oravcová, *Psychológia v edukácii*, Matej Bel University Press – Belianum, Faculty of Education, Banská Bystrica 2011, p. 465.

¹¹ L. Viřňovský, Z. Babicová, *Triedny učiteľ a spolupráca školy s rodinou*, Matej Bel University, Faculty of Education, Banská Bystrica 2012, p. 153.

¹² S. Babiaková et al., *Progresívny učiteľ: autoevalvácia v teóriách a výskumoch*, rev. E. Petlák, I. Pavlov, A. Seberová, 1st ed., Matej Bel University Press – Belianum, Faculty of Education, Banská Bystrica 2014, p. 244.

reasons and causes of behavioural changes. According to Emmer¹³, the teacher should inform parents about the possibilities of counselling and professional assistance of the prevention coordinator. If problems occur, the teacher should propose a cooperation with experts. Cooperation can be requested by reaching out to a school psychologist or to experts from pedagogical-psychological counselling services, or to educational and psychological prevention centres¹⁴. According to Gašparová¹⁵, the risks affecting pupils also come from the social and natural environment. That is the case especially when pupils' personalities are shaped in an inappropriate social and public areas, which at their discussed age, they cannot recognize on their own¹⁶.

In a pupil's upbringing, the difference between a teacher and a parent is that the teacher is able to be unbiased towards the pupils and can be expected to professionally define the educational objective and to try achieving it. The teacher is more objective, because they do not prefer a single pupil and cannot be manipulated by a pupil. The teacher is able to appropriately affect pupils during ethical education, religion education, natural science class, classroom management, and other lessons, where the curricula allow it thematically. In order for the preventive action of the teacher to be effective, it is necessary for a teacher to base their action on an analysis of the occurrence of negative phenomena. The teacher prevents such phenomena by monitoring in schools, their own intensive work as well as thinking about the choice of methods and forms of action of primary and secondary prevention. Obst recommends teachers to follow four basic steps when finding solutions to problems¹⁷:

- 1) knowing the situation that has arisen well but also knowing how it is perceived by the person who has found themselves in it. It should be remembered that it is essential to maintain a certain level of objectivity;
- 2) examining the context of the situation, identify with whom and where the situation arose, under what conditions, how long it has been lasting and at what stage it is. The mutual relationships and links between them need to be examined;
- 3) obtaining information from other people, regardless of whether they are or are not involved;
- 4) being a good, perceptive and attentive listener.

According to R.E. Mayer (according to Sternberg¹⁸), it is also essential to pay attention and allow pupils to express their inner feelings and emotions, includ-

¹³ I. Emmerová, *Prevenencia sociálnopatologických javov v školskom prostredí*, Matej Bel University Press – Belianum, Banská Bystrica 2007, p. 129.

¹⁴ S. Kariková, *Základy patopsychológie detí a mládeže*, Matej Bel University Press – Belianum, Faculty of Education, Banská Bystrica 2001, p. 156.

¹⁵ M. Gašparová, *Prírodovedná gramotnosť ako prevencia rizikového správania žiakov mladšieho školského veku*, in: W. Horyň, N. Dębowska (eds.), *Człowiek – społeczeństwo – państwo w sytuacjach kryzysu*, Wydawnictwo Wyższej Szkoły Bezpieczeństwa, Poznań 2014, pp. 303–310.

¹⁶ Ibidem.

¹⁷ O. Obst, Z. Kalhous et al., *Školní didaktika*, Portál, Prague 2002, p. 447.

¹⁸ L. Steinberg, J. Belsky, *Infancy, Childhood and Adolescence*, McGraw Hill, New York 1991.

ing through the development of creativity. The author states that creativity is associated with the creation of original and useful products, which can put many pupils with signs of inappropriate behaviour into a calm state of finding their internal balance. However, there is a lack of consensus in basic opinions as to whether creativity relates to the product, process, or personality. Regarding the pupil's personality, according to the author, creativity involves something new and useful, something that relates to the personality of the creator. Proponents of this approach see creative potential as a fundamental property of human cognition. The social perspective evaluates the production of new and useful with regard to the cultural environment, which approves or decides whether the process of creation can be included in a particular domain.

Huřová¹⁹ states that pre-school and younger primary school children are at their most rapid development at this stage of life, which is why it is the most appropriate opportunity to receive impulses, acquire basic abilities and build knowledge. Impulses to develop skills and acquire competences in the area of rapidly evolving science, technics, and technology exist precisely because creativity begins to take shape by acquiring knowledge, synthesizing it, and adopting new ways of thinking. It is a period of rapid acquisition of information, as well as of concrete experience in mediated activities oriented towards experiences. According to Kořuchová²⁰, this period is especially suitable for discovering, experimenting, exploring, questioning assumptions but also for making use of children's imagination. An important factor for the acquisition of technical creativity, and technical abilities and competences is, according to²¹, providing a suitable and optimal environment with enough material, tools, machines, appliances, and especially making sure that the atmosphere together with the interaction between the teacher and the pupil are appropriate. According to Stipek "effective motivation for creation is influenced by incentives not only at school but also outside the school, including various activities of interest, hobbies, as well as the influence of one's family and family environment"²².

Isen and Reeve²³ found that, on the one hand, a positive influence develops flexible thinking and facilitates problem-solving, and, on the other, increases performance, even if the tasks assigned are complex and difficult²⁴.

¹⁹ Z. Huřová, *Technické vzdelávanie a postoje učiteľov k obsahu pracovného vyučovania vo 4. ročníku na primárnom stupni školy*, Matej Bel University, Banská Bystrica 2017, p. 232.

²⁰ M. Kořuchová, *Bádateľsky orientovaná výučba v technickom vzdelávaní na primárnom stupni ZŠ*, "Časopis Technika a vzdelávanie" 2015, 4, no. 2, pp. 36–38.

²¹ A.M. Isen, J. Reeve, *The influence of positive affect on intrinsic and extrinsic motivation: Facilitating enjoyment of play, responsible work behavior, and self-control*, "Motivation and Emotion" 2005, no. 29, pp. 295–323.

²² D.J. Stipek, *Motivation and instruction*, in: D.C. Berliner, R.C. Calfee (eds.), *Handbook of Educational Psychology*, McMillan, New York 1996, pp. 85–113.

²³ A.M. Isen, J. Reeve, *The influence...*, op. cit., pp. 295–323.

²⁴ O. Autio, *The Development of Technological Competence from Adolescence to Adulthood*, "Journal of Technology Education" 2011, vol. 22, no. 2, pp. 71–89.

Programs for prevention of inappropriate behaviour in pupils of younger school age

By administering many of the offered programs, it is possible to ensure the physical and psychological balance of the learner. According to Hroncová, et al.²⁵, the aim of school prevention is to promote the development of positive social relationships, as well as guidance of pupils' behaviour so that they can control their emotions and resolve conflicts. Some prevention programs serve that exact purpose and, according to Adamik-Šimegová and Kováčiková²⁶, are effective thanks to the cooperation of everyone involved in the educational process. One of the programs that serve as such prevention is *Heart in the Palm (Srdce na dlani)*. It is a universal primary prevention program primarily focused on the socio-emotional and moral development of pupils, as well as the development of pro-social moral competences of kindergarten and primary school pupils with an emphasis on preventing aggression, violence and bullying. *Heart in the Palm* program directly provides methodological materials for teachers and other professionals. Teachers use posters, learning cards, puppets, stories that make it easier for pupils to talk about their feelings and also other people's feelings and experiences in a given or a similar situation. The program uses role playing, discussion, modelling, reading fairy tales, and so on. The teacher plays an important role and can be directly involved in the process of role-playing. Under their leadership, the given scenario is rehearsed. The teacher has to express enough support in a positive way for the desired behaviour of the pupil²⁷.

Program of effective conflict resolution is designed so to show pupils that conflicts belong to life, nevertheless, it is important to be able to resolve them positively. The aim of the program is also to equip pupils with skills that will help them deal with conflicts effectively. That means neither aggressively nor by an escape²⁸.

For prevention, the teacher also has *preventive programs for the development of emotional intelligence* at their disposal, which, according to Goleman²⁹, should be oriented towards the adoption of:

- 1) cognitive skills: self-realization, healthy self-assessment and self-confidence, understanding of other people's attitudes and opinions, understanding the social standards of behaviour, using constructive practices when solving problems, effective conflict resolution, positive attitude towards life;

²⁵ J. Hroncová et al., *Sociálna patológia a jej prevencia*, Matej Bel University, Faculty of Education, Banská Bystrica 2004, p. 220.

²⁶ M. Adamik-Šimegová, B. Kováčiková, *Kognitívne, emocionálne a morálne aspekty školského šikanovania a ich využitie v prevencii šikanovania na základnej škole*, Trnava University, Trnava 2011, p. 303.

²⁷ Ibidem.

²⁸ E. Gajdošová, G. Herényiová, *Rozvíjení emoční inteligence žáků*, Portál, Prague 2006, p. 324.

²⁹ D. Goleman, *Emoční inteligence*, Columbus, Prague 1997, p. 348.

- 2) emotional skills: identification of feelings, their manifestation, control of emotions and impulses, stress management, awareness of the differences between feelings and actions;
- 3) behavioural skills: verbal and non-verbal communication, use of active listening techniques, open advocacy for one's opinions and demands, constructive response to criticism and assertive enforcement of one's views.

Goleman³⁰ proposes these programs to be implemented directly in schools as a part of ethical education subjects. He even suggests the school should introduce a new subject directly aimed at developing emotional education and pupils' emotional intelligence. In preventing aggressive behaviour, in the form of games, discussion and role-playing, such subject can highlight the problems of media violence, intolerance and aggression. All preventive moments in the concept of ethical education help in the overall prevention of aggressive behaviour in schools and later on in life, in general. The teacher can also lead ethical education lessons by connecting education with relaxation. Another significant factor that can help the teacher to be effective in primary prevention is the possibilities of interconnection between subjects. Gašparová³¹ states that an appropriate platform for developing personal characteristic traits and social relationships is the area of social science education. In addition to subjects in which the elementary science and social studies and homeland studies are carried out, the content of the inter-sectional topics with their scope reaching beyond the subject itself likewise contributes to the appropriate preventive interaction. The competences that pupils acquire in the context of social sciences include the competence to participate in the development of rules and in the joint control of their obedience, knowing and respecting societal rules as well as the standards of social behaviour, respecting the opinions of others, even if they do not coincide with the pupil's personal opinions, and many others³².

Lipárová³³ advocates that "through playful creative activities using materials and tools with the help of simple artistic expressions, children are able to express their ideas, develop imagination and creativity, acquire and develop elementary artistic abilities, skills and habits." She further states that "art education familiarizes the child with the environment of visual creation representing a complex way of exploring a world in which all components of one's personality are involved in a harmonious relationship: sensibility, rationality, intellect, intuition, temperament, imagination, conscious and unconscious mental

³⁰ Ibidem.

³¹ M. Gašparová, *Regionálna výchova v ranej edukácii*, Matej Bel University, Faculty of Education, Banská Bystrica 2018.

³² Ibidem.

³³ L. Lipárová, *Vzťah výtvarnej a technickej edukácie na počiatkových stupňoch vzdelávania v ponímaní študentov predškolskej a elementárnej pedagogiky*, "Zagadnienia Społeczne" 2020, No. 1(13), p. 73.

activities”³⁴. The abovementioned suggests that the physical and psychological balance of the learners is shaped through playful, artistic, and various creative activities.

According to Bartalová³⁵, playing games is also an appropriate and effective method, as it is a natural part of every child or pupil's life. Because through a game the pupil acquires new skills, is at the forefront in the educational but also in the teaching process. Game has an irreplaceable place during the period of the pupil's younger school age. Through it, the pupil cultivates healthy competitiveness, experiences the joy of playing the game, develops the ability to learn how to lose, and develops social skills. According to Šimanovský³⁶, games help children develop healthy habits in experiencing life, and in behaving, which increases their psychological, physical and social resilience. Zentko³⁷ states that the use of a mask can also be included in various simple games and activities aimed at expressing emotions. According to the author, the mask represents a cultural and social phenomenon and is a placeholder of both internal and external transformation. Mimic masks, especially, depict psychological, deliberate and purposeful facial expressions. It is also advisable to work with masks in various games, dramatizations or to create them during the work-technical, or artistic activities. It is recommended to use them for a carnival, with an emphasis on those that are a part of our ancestor's cultural heritage³⁸.

J. Hlavsa³⁹ considers the need to create as the basis of an active and creative individual's personality traits. As part of this need, the author mentions:

- 1) the need for activity, active participation, production, creation,
- 2) the need for certainty, security, stability,
- 3) the need to obtain information, the need to find one's way in both internal and external environment,
- 4) the need for belonging and love,
- 5) the need for appreciation and respect.

With regard to the development of creative features of personalities of pupils of younger school age, Huřová – Gerová – Gašparová⁴⁰ focused on the examination of competences that are key to the field of science and technology and whose foundations pupils acquire precisely during the technical education at primary

³⁴ Ibidem.

³⁵ J. Bartalová, *Možnosti etickej výchovy v problematike agresívneho správania žiakov v školskom prostredí*, CPUN, Nitra 2012, p. 122.

³⁶ Z. Šimanovský, *Hry pro zvládání agresivity a neklidu*, Portál, Prague 2008, p. 175.

³⁷ J. Zentko, *Interdisciplinárne presahy scénického výtvarníctva v technickej edukácii*, “Zagadnienia Społeczne” 2020, No. 1(13), p. 25

³⁸ J. Zentko, *Interdisciplinárne...*, op. cit., p. 25.

³⁹ J. Hlavsa, “Psychologie v Ekonomické Praxi” 1971, nr 6(3–4), pp. 162–167.

⁴⁰ Z. Huřová, L. Gerová, M. Gašparová, *Relationship of teachers to the content of technical education in the 4th grade at primary school*, in: *SGEM 2017: 4th international multidisciplinary scientific conference on social sciences & arts, Albena, 24-30 August 2017: [recenzovaný zborník]. Book 3 Science and Society*, vol. 2, “Psychology and Psychiatry”; *Language & Linguistics*, 1st ed., STEF92 Technology, Sofia 2017, pp. 301–308.

level of education. This formation period of pupils' personality development is crucial for shaping creativity and what is also important, literacy in natural sciences. In a research probe of 86 pupils in the fourth grade of primary school during technical education, *the level of acquisition of pupils' technical competences* in activities such as tearing, folding, cutting and gluing paper, bending and cutting wire, threading and working with small materials, clay modelling, sewing textiles was measured. The findings served as the base of a deeper and longitudinal examination of the issue of the acquisition of technical and creative literacy. The findings searched for answers to the following research question: *What is the level of pupils' competence within the frame of the monitored issue with regard to knowledge, skills and the affective component of the attitude (the attitude towards activity)?* One of several prerequisites was whether *there would be a positive link between the teacher's relationship with the examined issue and the pupils' competence.*

Table 1 summarizes the results of the statistical analysis of selected topics and activities observed within the selected thematic units.

Table 1. Results of the correlation analyses between teachers' attitudes and pupils' competences

	Teacher_mater_summ							
	Conative		Cognitive		Affective		Whole = competence	
	<i>q</i>	<i>p</i>	<i>q</i>	<i>p</i>	<i>q</i>	<i>p</i>	<i>q</i>	<i>p</i>
Tearing	0.154	0.166	0.286 **	0.009	-0.081	0.471	0.204	0.066
Folding	-0.046	0.678	-0.077	0.490	-0.130	0.246	-0.088	0.429
Cutting	0.041	0.714	0.124	0.267	-0.032	0.777	0.126	0.260
Gluing	-0.031	0.784	-0.493 ***	0.000	0.003	0.980	-0.152	0.173
Bending wire	-0.189	0.089	-0.112	0.315	0.055	0.620	-0.139	0.214
Cutting wire	-0.022	0.847	0.138	0.218	0.047	0.673	0.068	0.541
Threading	0.166	0.135	0.267*	0.015	0.238*	0.032	0.241*	.029
Working with small material	-0.059	0.598	-0.189	0.089	-0.084	0.456	-0.110	0.326
Clay modelling	0.168	0.132	-0.139	0.213	-0.059	0.600	0.030	0.789
Textiles – sewing	-0.167	0.135	-0.268*	0.015	-0.136	0.224	-0.242*	0.028

coefficient *q* – resulting correlation coefficient, coefficient *p* – statistical significance

The abovementioned states that both pupils and teachers have a positive relationship with the subject of technical education, as well as with the actions and activities offered by the content of the given subject. This means that both pupils and teachers themselves show positive continuity in all areas of personality development, namely in the cognitive area, socio-affective area, and, especially, in the psychomotor and/or conative area.

It can therefore be assumed that with the application of the presented programs for prevention of inappropriate behaviour of pupils at a younger school age as well as the application of various games and artistic activities via the development of pupils' work-technical skills it is possible to ensure the physical and psychological balance of the learner.

Conclusions

The first person to start looking for possible causes of inappropriate behaviour is the teacher. The teacher's role is to prevent problems and to do so especially by thoroughly getting to know the pupil and by observing their daily behaviour. Sometimes it is enough to talk to children and it is not necessary for the teacher to be in control of all the programs aimed at preventing pupils' inappropriate behaviour. Instead, it is appropriate to know them and always have them at their disposal. The prevention of pupils' risk behaviour is very important and requires, in particular, professional and passionate teachers. Such teachers continuously implement prevention in the educational process, as reported by Hlavsa⁴¹, when he writes that pupils should meet the following basic needs: the need for activity, active participation, production, creation, the need for certainty, safety, stability, the need to obtain information, the need to find one's way in both internal and external environment, the need for belonging and love, the need for appreciation and respect.

REFERENCES

- Adamik-Šimegová M., Kováčová B., *Kognitívne, emocionálne a morálne aspekty školského šikanovania a ich využitie v prevencii šikanovania na základnej škole*, Trnava University, Trnava 2011.
- Auger M.T., *Učiteľ a problémový žiak*, Portál, Prague 2006.
- Autio O., *The Development of Technological Competence from Adolescence to Adulthood*, "Journal of Technology Education" 2011, Vol. 22, No. 2.
- Babiaková S. et al., *Progresívny učiteľ: autoevalvácia v teóriách a výskumoch*, rev. E. Petlák, I. Pavlov, A. Seberová, 1st ed., Matej Bel University Press – Belianum, Faculty of Education, Banská Bystrica 2014.
- Bartalová J., *Možnosti etickej výchovy v problematike agresívneho správania žiakov v školskom prostredí*, CPUN, Nitra 2012.
- Boroš J., *Základy sociálnej psychológie*, IRIS, Bratislava 2001.
- Čáp J., Mareš J., *Psychologie pro učitele*, Portál, Prague 2001.
- Emmerová I., *Prevencia sociálnopatologických javov v školskom prostredí*, Matej Bel University, Banská Bystrica 2007.
- Emmerová I., *Triedny učiteľ a jeho úlohy v prevencii porúch správania žiakov*, "Prevencia", Vol. IX, No. 3.
- Flešková M., *Sociálna percepcia, ako vníma učiteľ žiaka*, in: *Pedagogické a psychologické problémy osobnosti žiaka*, Matej Bel University, Faculty of Education, Banská Bystrica 2011.

⁴¹ J. Hlavsa, "Psychologie v Ekonomické Praxi", op. cit., pp. 162–167.

- Gajdošová E., Herényiová G., *Rozvíjení emoční inteligence žáků*, Portál, Prague 2006.
- Gašparová M., *Prírodovedná gramotnosť ako prevencia rizikového správania žiakov mladšieho školského veku*, in: W. Horyń, N. Dębowska (eds.), *Człowiek – społeczeństwo – państwo w sytuacjach kryzysu*, Wydawnictwo Wyższej Szkoły Bezpieczeństwa, Poznań 2014.
- Gašparová M., *Regionálna výchova v ranej edukácii*, MBU Faculty of Education, Banská Bystrica 2018.
- Gašparová M., Huľová Z., *Rozvíjanie technických zručností žiakov cez tradičné ľudové remeslá v regionálnej výchove*, „Inovace a technologie ve vzdělávání” 2019, No. 1.
- Goleman D., *Emoční inteligence*, Columbus, Prague 1997.
- Hlavsa J., “Psychologie v Ekonomické Praxi” 1971, No. 6(3–4).
- Hroncová J. et al., *Sociálna patológia a jej prevencia*, Matej Bel University, Faculty of Education, Banská Bystrica 2004.
- Huľová Z., Gerová L., Gašparová M., *Relationship of teachers to the content of technical education in the 4th grade at primary school*, in: *SGEM 2017: 4th international multidisciplinary scientific conference on social sciences & arts, Albena, 24–30 August 2017: [recenzovaný zborník]. Book 3 Science and Society*, Vol. 2, “Psychology and Psychiatry”; *Language & Linguistics*, 1st ed., STEF92 Technology, Sofia 2017.
- Huľová Z., *Technické vzdelávanie a postoje učiteľov k obsahu pracovného vyučovania vo 4. ročníku na primárnom stupni školy*, Matej Bel University, Banská Bystrica 2017.
- Isen A.M., Reeve J., *The influence of positive affect on intrinsic and extrinsic motivation: Facilitating enjoyment of play, responsible work behavior, and self-control*, “Motivation and Emotion” 2005, No. 29.
- Jakabčič I., *Základy vývinovej psychológie*, IRIS, Bratislava 2002.
- Kačáni V. et al., *Základy učiteľskej psychológie*, SPN Mladé letá, BA 2004.
- Kariková S., *Základy patopsychológie detí a mládeže*, Matej Bel University, Faculty of Education, Banská Bystrica 2001.
- Kariková S., Oravcová J., *Psychológia v edukácii*, Matej Bel University, Faculty of Education, Banská Bystrica 2011.
- Kopčanová D., *Prevencia násilia v škole a v školských výchovných zariadeniach*, “Vychovávateľ” 2001, Vol. 45, No. 7.
- Kopčanová D., *Význam prevencie agresívneho správania u detí a mladistvých*, “Vychovávateľ” 2004, Vol. 50, No. 6.
- Kožuchová M., *Bádateľsky orientovaná výučba v technickom vzdelávaní na primárnom stupni ZŠ*, “Časopis Technika a vzdelávanie” 2015, 4, No. 2.
- Lipárová L., *Vzťah výtvarnej a technickej edukácie na počítačových stupňoch vzdelávania v ponímaní študentov predškolskej a elementárnej pedagogiky*, „Zagadnienia Społeczne” 2020, No. 1(13).
- Obst O., Kalhous Z. et al., *Školní didaktika*, Portál, Prague 2002.
- Oravcová J., *Sociálna psychológia*, Matej Bel University, Faculty of Education, Banská Bystrica 2012.
- Steinberg L., Belsky J., *Infancy, Childhood and Adolescence*, McGraw Hill, New York 1991.
- Šimanovský Z., *Hry pro zvládání agresivity a neklidu*, Portál, Prague 2008.
- Špaňhelová I., *Průvodce dětským světem*, Grada Publishing, Prague 2008.
- Stipek D.J., *Motivation and instruction*, in: D.C. Berliner, R.C. Calfee (eds.), *Handbook of Educational Psychology*, McMillan, New York 1996.

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Višňovský Ľ., Babicová Z., *Triedny učiteľ a spolupráca školy s rodinou*, Matej Bel University, Faculty of Education, Banská Bystrica 2012.

Zentko J., *Interdisciplinárne presahy scénického výtvarníctva v technickej edukácii*, „Zagadnienia Społeczne” 2020, No. 1(13).