2.2 Health Literacy as a Central Professional Competency in Teachers

2.2.1 Introduction

Teacher training follows the aim of being effective, goal-orientated and sustainable. Teacher students are confronted with various scientific disciplines (e.g., pedagogy, psychology, mathematics or sports) as well as with so-called interdisciplinary domains of science (e.g. health, inclusion, gender) which, although not directly interacting with one other, do affect each other (Porsch, 2011). It is evident that the students’ socialisation influences their decisions for choosing a particular scientific specialty in the course of their studies; their convictions are strongly context-related (Porsch & Bromme, 2011).

Against this background, it is not only of great importance to consider how to initiate the imparting of qualifications for health literacy during teacher training and how to continue it later on, but likewise to take into account, which didactic qualifications students need to acquire in order to impart health literacy in a school context in a way that is suitable for them. In order to demonstrate the importance of health literacy for the target group of students, empirical research with high data quality is required. The increasing significance of exercise and diet is reflected in the increasing number of publications about physical activity in the course of child development and its predicator for health in the database "Pubmed". A particular focus lies in randomized intervention studies, which analyse the preventive effects of exercise and sports in children, frequently connected with the issue of obesity. According to the results published by the National Center for Chronic Disease Prevention and health Promotion (2011), in developed Western countries one third of the six to nineteen-year-olds is overweight and one-sixth is obese, respectively. Bibiloni, Pons and Tur (2013) support these results based on a meta-analysis of 25 representative national sets of data (three African, three American, eight Asian, nine European and two Oceania states).

Children pass through critically sensitive stages of life in their development, which are particularly susceptible to physical (in-) activity, relative mal or super nutrition, and obesity or even adiposities. Thus, the interaction system of school, which guarantees continual and temporarily defined contact with children and adolescents, needs to be supported in the process of instructing students to develop health literacy. Learning processes concerning health and exercise are neither gender-neutral (Zumstein & Stüss, 2006), nor can they be approached without considering the student’s individual biographical background. Only students themselves are capable of
changing their behaviour within their individual scope of action, which is defined by their surroundings (e.g., family, school). Likewise, a decision for or against a particular concept of qualifications regarding health literacy cannot be made separately from the conscious assumptions about a particular conception of humanity. Therefore, it seems indispensable to define education to health literacy as a context-driven interactive process.

In order to educate teacher trainees and teachers based on criteria of pedagogical and didactic professionalisation, education to health literacy is based on the imparting of numerous global and differentiated competencies: diagnostic competency, planning competency, professional skills, methodological competency, social competency and evaluation competency (Hallet, 2006; Oser & Oelkers, 2001). These subject-specific competencies should enable teachers to initiate sustainable learning and educational processes in students, as well as to accompany and supervise them in specific areas (e.g., health) throughout several years of their school career. In order to acquire the pedagogical and didactic-methodological skills in the field of health promotion, specialised scientific knowledge, for instance about theories, concepts or models of health promotion (e.g., salutogenesis, empowerment, setting-approaches, and health-belief-model), didactic-methodological skills for the implementation of complex issues, as well as sufficient practical teaching experience with heterogeneous groups of students are required.

These foundations of didactic-methodological knowledge enable teachers to competently organise the complexity of specific issues (e.g., health) for students in a target-oriented way and to impart these issues sustainably (Bouchard, Blair & Haskell, 2012; Dür & Felder-Puig, 2011; Kleiner, 2012). Teachers are not only assigned to impart factual knowledge in teaching-learning processes, but also to educate. This education, meaning the conscious and determined influence on the development of children and adolescents through specialized communication, is inextricably connected with the initialisation of values, the imparting of competencies and the realisation of goals (Fabel-Lamla, Heinzel & Klomfaß, 2008; Kleiner, 2011). In the case of health and well-being, the body is the foundation of what is purposefully communicated in the process of education in physical education.

Schooling, knowledge and competency form an intertwined unity in the sense of teaching-learning-processes, being the medium to acquire specific knowledge and skills, which in turn lead to the acquisition of competencies (Benner, 2007). A childhood determined by physical activity, exercise, playing and sports, not only is the foundation for the motoric, neuronal, socio-emotional and cognitive development (Opper, Worth, Wagner & Bös, 2007; Spitzer, 2007), likewise it forms a significant influencing factor on a healthy and active lifestyle later in life (Halle, Berg & Keul, 2000; Kraut, Melamed, Gofer & Froom, 2003; Telama, Yang, Viikari, Välimäki, Wanne & Raitakari, 2005; Twisk, Kemper & Van Mechelen, 2000). Thus, it becomes evident that the measures which enhance the quality of a teaching competency within the educational system in general, and in the area of exercise and sports within the
schooling system in particular, lie in the focus of expertise research (Starkes & Ericsson, 2003). One successful way to improve health literacy lies in understanding teaching as an expertise domain and in increasing the quality of teaching through the acquisition of expert knowledge (Gruber & Leutner, 2003). From the perspective of cognitive psychology, experts (e.g., health experts) have always been interpreted as a closed system. However, socio-cultural developmental theories have pointed out that the development of expertise contains a fundamental social dimension.

Experts are ascribed with their status through social attribution and the social recognition of their knowledge within a certain group. Alexander (2001), for instance, shows the various different interpretations of teachers’ competency by means of an international qualitative survey and thereby questions the objectively used concept of domain and expertise. Thus, it can be concluded that health literacy is not only based on cognitive-psychological expertise research, but needs to be expanded by factors of socio-cultural competency (Wang, Ceci, Williams & Kopko, 2004).

The question, how students can be supported in taking interest in their own health and in pursuing it purposefully and persistently, even if it requires effort, plays an important role in the context of longitudinal studies about the health status of children and adolescents (Vasconcellos, Seabra, Katzmarzyk, Kraemer-Aguiar, Bouskela & Farinatti, 2014; Whittemore, Chao, Popick & Grey, 2013) as well as in the context of input- and outcome-evidence-studies of health-promoting interventions (Geuter & Hollederer, 2012). Professional expertise and didactic competency are a crucial foundation for qualitative teaching (Koeppen, Hartig, Klieme & Leutner, 2008), but also form a predictor for the implementation of health-promoting strategies within the schooling system (Dür, 2008; Strong et al., 2005; Tones, 2002). As a result, two pivotal dimensions can be identified as a prerequisite for life-long learning: (a) interest in education (e.g., health) and motivation for learning as well as (b) the competency to implement this interest and motivation successfully (Achtenhagen & Lempert, 2013). Assuming an increasing negative motivational situation on the side of the students in correlation to the years spent in the school system, it is of great importance to address the significance of the correlation between school success and health (Dür, 2008). The analysis of this correlation is not only relevant for education authorities and parents, but especially for teachers themselves as well university training facilities for teacher students.

2.2.2 Contextual Control – about the Environment of Health Literacy Initiation

From a systemic theoretical viewpoint, students’ reaction to educational interventions is determined by their inner structure, which they have experienced in the course of their biographic confrontation with their environment (e.g., school, sports). The issue of context increases in importance wherever dealing with self-socialisation. Everything that happens, takes place within a specific context, and the inherent meaning
can only be explained in that respective context. From the perspective of students, their actions – even objectively unhealthy or harmful ones – are considered functionally appropriated within their own context. An educational intervention aiming at modifying the students’ behaviour thus causes a fundamental tension, which can only be resolved through strengthening the students’ self-socialisation.

The students themselves are not passively at the mercy of coercion within the school system, but can approach educational messages beneficially through self-socialisation. Here lies the quintessence of the educational process of health literacy: Only the students themselves and only by means of self-socialisation, they are capable of changing their unhealthy and irresponsible behaviour within a certain range of actions, because their applied strategies have not been suitable so far to manage and secure their own life. This perspective provokes one to contemplate, how long students are willing to be educated at all. The respective answer, however, is dependent on cultural norms and conditions as well as on the individual perspective.

In order to impart health promotion based on the subject of Physical Education in the school system, one has to consider and reflect on several complex issues for the modelling of health literacy. These issues are outlined in the following elaboration:

**Thesis 1:** Health competency and health-promoting behaviours of children and adolescents can only be practiced adequately, when being understood as an interactive process within a complex system which is framed by contextual control.

In the last decades, the issue of health has developed into a subject of multi-professional processing in several scientific disciplines. The individual professions have taken on different tasks in the field of health promotion and have found various different approaches for solutions. Undoubtedly, medicine represents the central scientific discipline in the field of research. Pedagogy and didactics can be considered the prevalent discipline when it comes to accompanying and realising strategies for health promotion. Taking into consideration the perspectives of particular studies dealing with the connection of health and biography (Hanses, 2010; Paul & Schmidt-Semisch, 2010), Gadamer (1993) points out the “hiddenness of health”, which proves that the individual inevitably has to deal with disease. For students on the other hand, disease has so far never been a prevailing issue, since they mainly experienced themselves as healthy. However, the issue not only lies in dealing with strategies for self-socialisation and self-optimisation, but in particular in the re-evaluation of the individual. Undoubtedly, children enter school with a biographically acquired and subjectively shaped understanding of health, exercise and sports, nutrition, and contentment with their own body (Lohaus & Ball, 2006; Schaefer, 1990). Herein is one part of the complex issue of health and well-being: As Simon (1995) highlights, a medium of interpersonal interaction is required in order to gain an understanding of the intra-psychological processes within another person. Teachers construct images about their students, so that teaching-learning processes can be initiated with
a distinct target-group-orientation. However, only few students openly communicate their thoughts and feelings, mostly due to lack of trustworthy relationships. Another possibility to construct such an image is the interpretation of behaviour and actions. In team meetings and class conferences, teachers communicate assumptions about the inner world of their students based on derived explanations and constructs of observation. These interactive processes are part of the social system of school, which are determined by its context. However, health competency, meaning the ability of individual students to make decisions in their daily lives which enhance health, can simultaneously be counteracted by the system itself. Thus, studies about school absenteeism (Stearns & Glennie, 2006; Strom & Boster, 2007; Thoonen, Sleegers, Peetsma & Oort, 2011) and stigmatisation in the school context should not be concealed.

The other part of the health issue lies in the health status of the students, which is objectively determined according to medical norms and standards (Bibiloni et al., 2013; Seeman, 2000). In all modern Western societies at the point of entering school, a variety of problems can be identified in children, especially in the motoric system. Furthermore, mental issues such as aggression, anorexia, ADHS, lack of concentration, learning disorders and stress need to be mentioned (Bundesministerium für Gesundheit und Frauen, 2006; Rusch & Irrgang, 2002; Samdal, Wold & Bronis, 1999). Physical activity and physical fitness in children and adolescents has been decreasing continuously throughout the last three decades (Bundesministerium für Gesundheit, Familie und Jugend, 2007; Praetorius & Milani, 2004). Super-nutrition, obesity and adiposities form an endemic in many European countries (Bös, 2003; Bretschneider & Bünnemann, 2004; Dür, 2008; Elmadfa, 2012; Fuchs, Göhner & Seelig, 2007; Graf & Starke, 2009; Lohaus, Jerusalem, & Klein-Heßling, 2006; Strong et al., 2005). With a high probability, it is predicted that obese children will continue to become obese into adulthood (Holterman, Holterman & Browne, 2012), direct or indirect consequences of adiposities are a significantly higher risk for coronary heart disease, auricular fibrillation, heart defect, hypertension, metabolic syndrome, hyper-insulinism, impaired glucose tolerance, type-II-diabetes as well as other heart metabolic diseases (Flynn, McNeil, Maloff, Mutasingwa, Wu, Ford & Tough, 2006; Zalesin, Franklin, Miller, Peterson & McCullough, 2008). Likewise, the connection between endurance performance, obesity and later medical consequences has been statistically proven (Klein, Fröhlich & Emrich, 2013; Ortega et al., 2013).

**Thesis 2:** Teachers approach the issue of health and health competency with diverse sensitivity and advice and accompany students in issues of health literacy according to their varied status of professional training.

Teacher training is supposed to be efficient and goal-orientated with regard to respective tasks. Systemically speaking, this means to enhance the contextual conditions for students in order to facilitate the inner learning process. Teacher training is meant to be goal-orientated in a sense that teachers are capable of competently supporting
their students according to their individual abilities and possibilities in specific inter-disciplinary domains (e.g., health). The realisation of measures in health promotion within the school system can only be successful, if teachers receive extensive training in the area of health competency. This training should focus on the personal, social, physical and thus health-orientated development of students with the help of exercise, games and sports, as well as other factors.

Furthermore, teachers should be put in a position in which they can enable students to continually participate in health culture with its differentiated motives, characteristics and social organisation formats in an autonomous, responsible and active way. Additionally, teacher training includes a critical reflection of the problematic developments in health culture. Teachers of all subjects can plan, initiate and control health-promoting learning processes. They need to acquire a profound health-promoting diagnosis and promotion competency (health literacy). This includes well-founded knowledge about crucial health-orientated topics, theories, development perspectives and areas of application. Additionally, they should be able to plan health promotion in a target group and situation-orientated way, including the use of up-to-date teaching media and technologies, and to incorporate measures for the individual support of learning processes.

**Thesis 3:** Health literacy and physical health are structurally connected in the subject Physical Education. However, health literacy needs to include all subjects of the school system and provide interlinked and focussed resources of health promotion for the sake of the students.

The “Charter for Physical Education and Sport” (UNESCO, 1978, Article 1, p. 5) states that there is “a fundamental right of access to Physical Education and Sport”. This implies the freedom of individual development as well as “guaranteed both within the educational system and in other aspects of social life (through having) full opportunities for practising Physical Education and Sport” (p. 5). In article 2, national agencies are challenged to support physical education and sports as a teaching subject in school: “Every overall education system must assign the requisite place and importance to Physical Education and Sport in order to establish a balance and strengthen links between physical activities and other components of education” (p. 6).

In their article, Mõttus, Johnson, Murray, Wolf, Starr and Deary (2014) confronted themselves with the question: “Towards Understanding the Links between Health Literacy and Physical Health” and pointedly concluded that, “low health literacy predicts poor health” (p. 164). At the World Summit of Physical Education Hardman and Marshall (2009) pointed out Physical Education is an obligatory subject in more than 92% of the 126 states taken into account. However, in only 71% of the evaluated states, Physical Education is actually provided in accordance with the national legislative regulations. In 29% of the states, PE is not at all implemented in school according to
legal requirements. Especially in Africa (75%), Asia (67%), Central and Latin America (50%) and partly in Southern Europe (50%), the legal requirements for the opportunities concerning the subject PE are only realised inadequately. The school time-tables and the syllabus of the individual countries list the number of school lessons allocated for PE. The required number of lessons per week is not only dependent on the individual school type, but also differs according to the grade in the respective countries. Hardman and Marshall (2001) showed that in only 56% of the evaluated countries the amount of time provided is identical, while in 44% of the countries it strongly fluctuates according to school type and grade. Interestingly, for students in primary school and in the first years at secondary school (age 6-12), the syllabus dictates the highest number of PE lessons. In higher grades and thus with increasing age, the number of lessons allocated for PE continually decreases, and frequently it is even offered on a voluntary basis towards the end of high school (age 16-18).

**Figure 2**: PE time allocation (min/week) by year (Hardman & Marshall, 2009, p. 34)

PE is the only subject in school which, through a variety of topics (e.g., physical activity, coordination, nutrition, stress management, performance, body experience, First Aid, body posture training), interdisciplinary sport science (e.g., pedagogy, didactics, biomechanics, sociology, psychology) and multi-perceptivity (e.g., expression, impression, adventure, performance, health), is able to prepare students for a health-promoting lifestyle, by means of self- and social competency, as well as expertise and the promotion of internal and external resources over a time span of approximately 8 years (Lohaus & Ball, 2006; Lohaus et al., 2006; Strong et al. 2005; Telama et al. 2005). However, due to a lack of resources, PE as a distinct subject is partly overburdened by
imparting exercise-related health literacy like exercise competency, control competency and self-regulation competency (Sudeck & Pfeifer, 2013). The goal of imparting health literacy, as the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions, and it requires the involvement of all subjects and their teachers.

Indisputably, the expertise of teachers is comparably narrow and mostly only valid within the context of their respective subject and in the context of the students they teach. Against this background, which comprehensively addresses the problem of health literacy, the question needs to be posed as to how health literacy can be modelled in order to acquire expertise in the area of health promotion.

2.2.3 Health Literacy – Terminology and Research Status

Terminology plays an organising role in scientific discourse. The terms “health”, “competency” and “standard”, but especially the term “health literacy” are not used uniformly in the context of educational science, medicine, health science or training programmes for health promotion. However, only through the predominant contextual acceptance of the term of health literacy, it can become a certain standard. This prerequisite leads to the fact that the term enables certain reliability in discussion in the systems of education, economy or medicine. With their study of the efficacy of teacher training systems, Oser and Oelkers (2001) assume certain standards (which definitely can be equated with the concept of competency) and present a basic position of competency genesis. They formulate 88 standards, which, dependent on their combination and intensity of teaching strategies, are summarising in 12 areas: 1. teacher-student-relationships and positive feedback, 2. diagnosis and student support, (...), 11. teachers’ self-management competency, 12. general didactic and methodological competencies. However, the thematic dimension “health literacy” was neither added to this extensive catalogue nor explicitly addressed in any of the 88 standards. As Lenartz (2012) points out, neither the term „standards“ (prevailing in educational science), nor the term „competency“ (which substituted „standard“ in the last decade), but instead the English term “literacy” or “health literacy”, respectively, prevails, which in turn formed the concept of health competency. Assuming that literacy subsumes basic cultural technologies such as reading and writing, we can understand health literacy as the ability to read, understand and use health information (Lenartz 2012; Lenartz, Soellner & Rudinger, 2014). This definition can be considered as the functional approach to health literacy.

The characterisation of health literacy provided by the UNESCO explicitly mentions functional health literacy as the ability to apply reading and numeracy skills to health care settings. The U.S. National Library of Medicine National Institutes of Health describes health literacy as the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed
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Health literacy is essential for making appropriate health decisions. This clinical-medical approach to health literacy, which is especially prevalent in Anglo-American countries, was contextually expanded by the WHO (1998) to include the cognitive and social skills that determine motivation and ability to access, understand, and use information to promote and maintain good health (Nutbeam, 1998). Health literacy is now interpreted as a life competency (health promotion and preventative health care) and located within a “life-worldly conception approach” (Pleasant & Kuruvilla, 2008; Soellner, Huber, Lenartz & Rudinger, 2009).

In accordance with Lenartz et al. (2014), both approaches to health literacy operate in a predominantly autonomous fashion. The historical steps of contextual precision and societal implementation of health literacy focus on social, economic, and environmental dimensions, which are also connected to the position of health promotion represented in the Ottawa Charter. One of the most important representatives of an outcome-model for health promotion is Nutbeam, who distinguishes between three sequential levels of health literacy: (a) functional health literacy, (b) interactive health literacy as the development of personal skills, and (c) critical health literacy as the personal and community empowerment. According to this model, the levels of health literacy in this sequential order lead to higher autonomy and personal empowerment. Health literacy is more than the ability to read leaflets or make appointments. Health literacy encompasses knowledge competency, personal skills, and self-consciousness to actively enhance one’s personal health by implementing lifestyle changes.

The importance of health literacy becomes particularly evident in situations of crisis. Zarcadoolas, Pleasant, and Greer (2005) base their work on the Anthrax crisis to develop a wide-ranged model of Public Health Literacy and define it as the wide range of skills and competencies that people need to seek out, comprehend, evaluate, and use health information and concepts to make informed choices, reduce health risks, and increase quality of life. Similarly to Zarcadoolas et al. (2005), Kickbusch and Maag (2008) regard their Health Literacy Concept as contextualized and integrated into a widespread social framework. According to Kickbusch and Maag (2008), the initial task-based definition is substituted by a skill-based conceptualisation of literacy. Health literacy is defined as a focus on the knowledge and abilities an adult must possess in order to perform in various societal domains. The concept itself is associated with levels of education and an important predictor of community participation, employment, and health status.

Health literacy was formerly defined as a number of measures to secure health in the 19th century (1st health revolution) and later viewed under the aspect of health care and insurance in case of disease (2nd health revolution). Nowadays, it is viewed under a stronger socio-political focus from the perspective of health promotion (3rd health revolution). Abel and Bruhin (2003) define health literacy as the knowledge-based...
competence for a health-promoting lifestyle. This knowledge is primarily imparted through culture, education and upbringing. Health is thus characterized in the context of cultural capital. In the course of the development of the internet, the question of eHealth literacy became relevant.

The term eHealth was introduced by Norman and Skinner (2006a), who describe it as the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem (Norman & Skinner, 2006b). On the scale, which they developed to measure eHealth literacy, they distinguish between analytical and context-specific skills: “Analytical skills cover traditional literacy and numeracy, information literacy, and media literacy; context-specific skills on the other hand comprise health literacy, computer literacy, and science literacy” (Soellner Huber & Reder, 2014, p. 30).

The construct of health literacy cannot be defined without explaining the terms “competency” and “literacy”. During the past decade, these terms shaped the educational discussion although without achieving consensus. For instance, Weinert (2001) differentiates between six ways of using the term literacy/competence (e.g., as a general cognitive disposition for performance, as a context-specific cognitive disposition for performance, as the ability for necessary motivational orientation to tackle challenging tasks, as a meta-competence and key-competence). In the field of teaching methodology, competencies are understood as acquirable cognitive abilities and skills, which are necessary to solve particular domain-related problems.

The connection of competency with factual knowledge is evident. Beyond that, in educational-scientific research the term competency experiences a broad spectrum, for instance in terms of professional, foreign-language, individual, communicative, moral or operative competency. By means of international examples they point out, that while generally between 7 and 12 educational competencies are differentiated, at least five criteria, such as performance of the end-product or goal-state of instruction, are inevitably necessary in order to define educational competencies comprehensively (Albanese, Mejicano, Mullan, Kokotailo & Gruppen, 2008).

Pedagogic competency, according to Tenorth and Tippelt (2012), consists of social and didactic abilities and skills, which are necessary to practice a pedagogic occupation and to find solutions for the occurring problems in these contexts. Based on this Sudeck and Pfeiffer (2013) elaborate characteristics of exercise-related health literacy. They describe those characteristics additively as a conglomerate containing cognitive, as well as motoric abilities and skills, which are necessary to engage in health-promoting physical activity. Likewise, it contains the motivational, volitional and social readiness or abilities, respectively, to successfully and responsibly imbed health-promoting physical and sportive activities into the variable situations of everyday life (Sudeck & Pfeiffer, 2013).

The research status in the field of health literacy can be investigated in several databases on the basis of particular descriptors, such as PsycINFO, PSYNDEX, PsyJOURNALS, PubMed and ISI-Web of Science. With the help of the internet search
engine Google, individual terms have been investigated quantitatively and unsystematically. The current results (Dec 8th, 2014) show 86,500 results searched on for “Gesundheitskompetenz“ (the German term for health competency), 16,600,000 results for “health literacy“, 1,440,000 results for “components of health literacy“ and 32,400,000 for “health competencies“.

In accordance with Riegler and Langmann (2011), who conducted a research from 2000 to 2011, and with Soellner et al. (2009), who conducted research from 1995 until 2009, it is evident that the German term barely ever appears in any scientific databases, while the English terms „health literacy“ and „health competencies“ are more frequently mentioned. In addition, attention needs to be directed to the fact that from 2000 until 2014, the database PsycINFO showed 1676 results for the term „health literacy“. The relatively young term eHealth Literacy, which is one partial area of health literacy, can be found relatively infrequently on the internet, appearing 331,000 times.

These indications for literary research point out the dynamics of the development and the relevance of the topic health literacy in the German and English-speaking world. Based on these approaches and developments of health literacy, strategies for modelling and measuring health literacy will be discussed. With the help of the methodological procedure of concept mapping (a technique to visually depict knowledge and information), expert interviews with professionals in the health sector, as well as multivariate methods (cluster analysis, MDS), Soellner, Huber, Lenartz and Rudinger (2010) develop a structural model of health literacy which identifies 9 clusters (see figure 3): (1) self-regulation, (2) self-perception, (3) action control, (4) basic skills, (5) information processing, (6) information acquisition, (7) systemic knowledge and systemic actions, (8) communication and cooperation, (9) beneficial personality traits. Health literacy is summarized in a network of (a) basic skills (literacy/numeracy), (b) action competence (with 4 competence areas), (c) knowledge, and (d) motivation.

![Figure 3: 3-dimensional concept map (Soellner et al., 2010, p.109)](image-url)
Based on this model Lenartz et al. (2014) described contextual components of health literacy on the level of key qualifications. In particular, his focus lies on implementing abilities of health-related self-guidance, self-regulation, and self-control.

The structural model shows that on a perceptive-motivational level health-related self-perception is of importance for all other competence dimensions. Similarly important is the role of taking responsibility for one's own health. On the action-related level, dealing with health information plays a crucial role with regard to physical health. It is evident that depending on situational requirements, the ability of dealing with health information as well as the communication and cooperation in health-related questions is of great importance (Soellner et al., 2014; Steckelberg, Hülfenhaus, Kasper, Rost & Mühlhauser, 2009). Due to research about the modelling of health literacy, the various levels and dimensions of the construct can be identified, depicted and thus made available for the process of health promotion.

**2.2.4 Insight and Consequences for Approaching Health Literacy**

Professional knowledge is the knowledge that teachers need in order to practice their profession and to plan, conduct and evaluate their teaching. Pedagogic professional knowledge is independent from any subject and enables teachers to create an atmosphere, in which learning can take place. Competencies, competency diagnostics,
as well as the promotion and development of professional competencies are a great demand in the field of teacher training. In order to capture and diagnose competencies, Frey (2006) lists 47 tools, which were published between 1991 and 2005 and which, against the quality criteria of reality, validity and objectivity, seemed suitable to diagnose abilities and skills in prospective teachers (Bjegovic-Mikanovic, Vukovic, Otok, Czabanowska & Laaser, 2013).

The analysis of these instruments shows that four groups of competencies seem of particular relevance: Professional, social, methodological and personal competency. In the context of forming a model of pedagogic competency, aspects of health literacy remain vague, or even completely unmentioned. The most frequently used instruments for the detection of health literacy are the Rapid Estimate of Adult Literacy in Medicine (REALM and REALM-R), and the Wide Range Achievement Test (WRAT), a screening procedure which measures basic skills such as reading, calculating and spelling, the Test of Functional Health Literacy in Adults (TOFHLA), which is designed as a comprehension test containing 50 examples close to everyday life, and finally the Short Assessment of Health Literacy for Spanish-speaking Adults (SAHLSA), which similarly tests how well the participants can understand and process given information.

Against the background of these results and from the perspective of health promotion and health literacy, the question arises as to which measures can be taken into account to ensure the acquisition of basic knowledge about health in subject-specific and cross-subject teaching. How can a critical approach to health information be promoted and how can appreciative and trustworthy communication concerning health issues are enabled? It is dependent on the teachers themselves and their pedagogic professionalism, when it comes to imparting topics of health literacy, such as self-regulation, self-perception, information acquisition, basic skills and systemic knowledge. Professional, didactic-methodological and pedagogical knowledge, teaching experience and epistemological convictions and beliefs form the prerequisites which arouse the students’ interest for health-related questions. With their existing and reflected health competencies, teachers have a tremendous influence on the learning progress of their students. The results demand a way of teaching which is characterized by an active teacher-role, a low level of teacher control, and co-operative ways of working and clear structures regarding teaching processes. Research has proven that students learn more from teachers who possess certain didactic competencies and characteristics than from teachers who don’t.

Learning for health and health literacy is based on didactic principles in the school setting and will be successful, if tasks are experienced and not only tackled. Thus, in the school setting, learning for health needs to be communicated as a long-term process. The acquisition of health literacy is particularly successful when integrated and arranged as an issue of daily school routine over a longer period of time. Short-term and individual initiatives are barely sustainably and not capable of building sensitivity and knowledge for health literacy in students.
Connection to prior knowledge: Learning is particularly successful when health-promoting topics, goals and content are adequate for the individual student. Analysing the status of knowledge concerning health, associative connections and possible links to other subjects and school routine can serve as a manifold, exciting and active starting point.

Generating links to prior knowledge: The dealing with individual experiences of children and adolescents in the area of health is a necessary prerequisite for goal-oriented learning for health and exercise.

Selection of goals, content and topics: Health-promoting teaching processes follow the aim of supporting the physical, mental and social potential of students, in order to build health resources. In connection with school plans and in coordination with every day-life situations of the children and adolescents, the topic health exercises needs to be taught in a didactically differentiated way, which means: adequate teaching (memory aids, assigning tasks which enable students to make reasonable decisions about their individual health) and consequently teaching correctly (skilled application, assigning additional tasks, evaluate tasks, use worksheets, recapitulation, draw consequences, give room to fun, etc.)

Interlinking selected topics, content and goals: Children and adolescents need to be introduced to various fields of exercise (e.g., recreational sports), and health-related topics (e.g., nutrition, smoking, alcohol, noise, posture, stress) need to be elaborated and linked with other subjects (see the teaching examples). Learning for health and exercise within the school setting is an active process, which creates a balance between instruction and construction. Teachers are prompted to act in didactically varied ways and to use adequate didactic forms of knowledge (e.g., “know-that”, “know-how”, “knowing in action”).

To sum up, learning for health and exercise in the school setting is particularly successful, if the three qualitative dimensions of didactic staging are considered: multi-perspectival, multi-modal and multi-productive work (Reich, 2009). The heterogeneity of the students requires addressing specific topics (content) from several perspectives in different situations. Students should realise the importance of the differences between perspectives, and experience how and in what ways their own perspectives can be enriched (e.g., nutrition, happiness, etc.). If the students are characterised by great heterogeneity, then the ways of teaching need to be as well.

The “adventures inside the head“, the results of learning and the active dealing with specific questions of health, exercise, playing and sports are variously complex. The more extensively they are being reflected, the more sustainable are the results. As a basic principle, one should focus on results and formulate memory aids. Thus, feedback becomes a part of self-regulated and comprehensive learning. Trusting in one’s own possibilities, abilities and skills (e.g., be realistic!), trusting in solvability (e.g., recognize what is possible!) and trusting in meaningfulness and variability (e.g., change the circumstances!) can be perceived as the fundamental principles for learning for health and exercise.
References


National Center for Chronic Disease Prevention and Health Promotion (2011). School health guidelines to promote healthy eating and physical activity. MMWR Recommendations and Reports 60(5), 1–76.


