Education for Media Literacy

Media in Waldorf education

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Contents

Education for Media Literacy
Basic outline of the educational concept
Media in Waldorf education[1]

1. Educational goal: Media literacy

The declared aim of Waldorf education is to help children cope with the demands of modern life after completing school - and this necessarily includes the development of media literacy. At leaving school, all pupils should be able to use all kinds of media properly for their own education, and also understand exactly how media are technically structured and how they work. They should therefore develop competences regarding the use of educational media through theoretical and, above all, practical media education.

With this objective, Waldorf education is designed to address the current demands of modern times. The decisive difference to other pedagogical views lies solely in the methodology, in the way in which the educational goal of "media literacy" can be achieved.

In its educational concept, Waldorf education is explicitly oriented towards the developmental steps children take from birth to adulthood, through three major stages of development, each lasting approximately seven years.[2]

1 See also: HÜBNER, Edwin (2011): Waldorfpädagogik im Medienzeitalter. In: LOEBELL, Peter (Ed.): Waldorfschule heute, Eine Einführung. Stuttgart.

HÜBNER, Edwin (2015): Medien und Pädagogik. Gesichtspunkte zum Verständnis der Medien, Grundlagen einer anthroposophisch-anthropologischen Medienpädagogik. Stuttgart.

2 LOEBELL, Peter (Ed.) (2011): Waldorfschule heute. Eine Einführung. Stuttgart.

SCHIEREN, Jost (Ed.) (2016): Handbuch Waldorfpädagogik und Erziehungswissenschaft. Standortbestimmung und Perspektiven. Weinheim, Basel, p. 228-253.

STEINER, Rudolf (2004): Quellentexte für die Wissenschaften. Bd. 2., Texte zur Pädagogik aus dem Werk von Rudolf Steiner: Anthroposophie und Erziehungswissenschaft, publ. by Johannes Kiersch. Dornach. Other education experts who have been deeply involved in research on child development also observe developmental phases. For example, Dieter BAACKE described child development in three volumes: BAACKE (2004): Die 0- bis 5jährigen. Einführung in die Probleme der frühen Kindheit. Weinheim. BAACKE (2001): Die 6- bis 12jährigen. Einführung in die Probleme des Kindesalters. Weinheim. BAACKE (2003): Die 13- bis 18-Jährigen. Einführung in die Probleme des Jugendalters. Weinheim.

2. Development-oriented pedagogy

Human development is the central benchmark of Waldorf education. Children want to actively recognize the world. Purely cognitive-abstract ways of thinking are foreign to them even at the beginning of their school years. The methodology of Waldorf education ties in with this fact. It is therefore primarily based on practical artistic activities in order to introduce the children to the learning content of these activities.

This can best be illustrated by introducing "writing" as a media form. Initially, children are artistically engaged in creating pictures based on letter narratives. The various letters "crystallize" out of the self-generated images. This drawing-artistic activity is followed by writing, and reading fluency is finally intensively practiced by writing personal texts before moving on to reading printed texts.[3] Through this methodical approach, Waldorf education addresses the whole essence of the human being: by being artistically active, the child is challenged as an individual who wants to act and feel. The child's imaginative thinking and cognitive powers are appealed to by condensing the pictures into abstract symbols.

Too often we underestimate how media education already begins with writing and learning to read in the first grade. With writing, the child learns to master the medium that has shaped and bolstered human culture for some 5000 years.[4]

The two other media forms - images and sound - have also shaped human culture since time immemorial. It therefore makes sense for children actively to learn to paint or draw their own pictures and learn to master a musical instrument at an early age. This early ability is an indispensable basis for being able to judge media products at a later age. In the "analogous" handling of media forms, they have learned and practiced how to implement their own ideas creatively in many ways. They know from their own experience how difficult it is to create appealing images and music that sounds good. Children who are able to have such experience become sufficiently mature, not only with regard to writing, but also with regard to images and sound media.

3 Detailed examples can be found in: DÜHNFORT, Erika; KRANICH, Ernst Michael (1991): Der Anfangsunterricht im Schreiben und Lesen in seiner Bedeutung für das Lernen und die Entwicklung des Kindes. Stuttgart.

RICHTER, Tobias (2016): Pädagogischer Auftrag und Unterrichtsziele – vom Lehrplan der Waldorfschule. Stuttgart, p. 96-103, S. 248-254.

4 HAARMANN, Harald (2010): Universalgeschichte der Schrift. Frankfurt am Main.

Analog procedures are easy for children to understand because they can grasp things in the true sense of the word. Only after the age of twelve, when the last phase of brain maturation begins with the onset of puberty, is the young person really able to understand circuit logic, as well as to gradually become capable of impulse control, i.e. to withstand the seductions emanating from media content.

After children have become familiar with analog techniques, which are an essential part of every media competence, based on practice, the basis is created to judge from their own experience how digital procedures can replace analog ones and, above all, when and how they can be used meaningfully.

3. Fundamental aspects of media education from a Waldorf perspective

3.1. Basis of media literacy

The current social focus on digital media must not obscure the fact that the competent handling of digital media is based on competences relating to the "old" media. For example, a good command of writing is an indispensable prerequisite for participation in Web 2.0. However, in addition to writing, there is the ability to communicate with still and moving images as well as in sound productions.

Media literacy therefore encompasses the mastery of all forms of media:

Competence in writing and reading

Competence in all forms of image generation and understanding

Competence in all forms of media sound products and understanding music.

Once acquired, these skills are independent of the media. For an adult, competence in the form of writing does not depend on whether paper or screens are used as the medium. However, a primary school child's understanding is far overtaxed to cognitively grasp the technology of the medium "computer". In contrast, the technology of production on paper is clearly within the limits of a child's understanding. Therefore, it makes pedagogical sense to use the medium "paper" when learning to write. Writing with a pen also trains the fine motor skills of the child, which are far less exercised when using a tablet or notebook.[5]

3.2. Direct and Indirect Media Education

Waldorf education tries to look at people from different angles: cognitive, emotional and volitional. From this point of view, people come into contact with media on several levels. They deal with the mediated content with their thoughts and ideas. Especially by using active hands, they have immediate physical contact with the medium. Its content occupies their consciousness, while the contact with the medium is largely unconscious. Despite this lack of awareness, the medium also has an effect on people and influences their emotion and cognition and, of course, their behavior in dealing with the respective media.

Media education must take this into account. On the one hand, it focuses on both

5 SPITZER, Manfred (2013): Wischen – Segen oder Fluch? Zu Risiken und Nebenwirkungen der neuen Art des Umblätterns. In: Nervenheilkunde 10/2013.

the conscious imaginative relationship to specific media as well as the relationship to media activity. Media education is therefore divided into its direct and indirect forms. The field of direct media education encompasses media content and the various media forms in which the content can be presented. How can one do clever research on the internet? How do you present your thoughts in public? How do I behave on social networks? How can one handle the possibilities of Web 2.0 in a meaningful way? What mistakes and dangers must be avoided?

Direct media education also has the task of conveying a basic understanding of how various media function in principle.

The task of indirect media education is to encourage children and young people to practice all the skills they need in the information age, but which they cannot acquire in direct contact with media. Indirect media education, for example, provides practice areas in which pupils can train and exercise concentrated attention. Above all, it ensures that young people learn how to acquire knowledge, i.e. how to create a meaningful whole from the many individual pieces of information provided by the media. Children and young people need to learn how to build knowledge from information.[6] In short: Indirect media education trains the self-competence required in the age of digital technology. In times of frequently occurring digital cyberbullying, it is necessary to provide children with real fields of experience in which they can train the respectful and attentive contact with others.

From a Waldorf perspective, media education is divided into two levels: an indirect media education, which guides the adolescent to individual maturity, and a direct media education, which enables the self-competent person to deal meaningfully with the media world. Media literacy is possible only when both factors are taken into account.

6 SACHER, Werner (2000): Deformationen des Wissens und Lernens in der Informationsgesellschaft. In: KLEBER, Hubert (Ed.): Spannungsfeld Medien und Erziehung. Medienpädagogische Perspektiven. Munich, p. 135 – 149.

3.3. The term “media”

The basis of a media concept is, of course, the question of what is meant by media. One characteristic of the current concept of media is that it is so multi-layered that no generally accepted definition has yet been agreed upon. Often, only digital devices are called media. Such a curtailed understanding of “media” bears the risk of likewise curtailing the associated concept of media competence, reducing it to a narrow and incompletely understood field. It is much better to speak of “media literacy” in the pedagogical context.

As an educational concept, a phenomenological approach to media is best served by asking: ‘What forms of media do people encounter in their everyday lives and how do they deal with them?’

There are three types of everyday media:

Written

Images (still or moving pictures)

Sound (music or speech)

However, the media forms of writing, images and sound never occur on their own, but need a material (technical) basis to appear: be it plain paper, a screen, a loudspeaker or something else. So when a person reads, this activity can be seen on three levels. First of all on the mere content level (“which content is conveyed by writing?”), then the writing itself as a media form, and finally the material carrier on which the writing appears, be it paper, screen, or a screen projection. The same applies to the image (film) and the sound.

One can therefore distinguish three levels for all media:

Media content – the meaning conveyed to people.

Media form - the process by which the content is conveyed or presented.

Media carrier - the material basis on which the “formed” content appears.

Media education must take place at all these levels: for writing, handling images and sound, with regard to the media carrier, and especially concerning media content, where the ability to criticize and reflect is crucial.

4. Media literacy

If one takes this differentiated media concept as a basis, then media literacy not only encompasses the ability to handle devices skillfully, but also includes much more. It extends over five levels:

I. Media content

1. Being able to understand and judge the contents of texts, images and acoustic productions presupposes the most comprehensive general education possible.

II. Media forms

2. Being able to write and read.

3. Being able to produce and judge pictures, films.

4. Being able to produce and judge music productions, radio reports.

III. Media carriers

5. Being familiar with the basic functioning of important devices and the internet.

6. Being able to handle technical equipment.

7. Using devices sensibly for learning: research and presentation.

IV. Self-competence

8. Ability to concentrate, mindfulness

9. Self-control, mental discipline

10. Being able to actively engage in something; developing interest and initiative.

V. Social skills

11. Ability to empathize

12. Ability to assume responsibility

A comprehensively designed media education program has to take these different areas into account and must encourage the training of these skills. This is what Waldorf education tries to do.

5. Main features of the media concept in Waldorf education

5.1. Indirect media education precedes direct media education in time

The media schooling in Waldorf education is oriented towards the development of the child - and not on the presence of hardware. It pays attention to the fact that there are developmental periods of young persons in which the intensive use of digital media of all kind disturbs and obstructs healthy physical and mental development. Waldorf education refrains from using digital devices in education and teaching in this early phase.

This is why indirect media education precedes direct media education in terms of time. Indirect media education promotes the child's abilities that are needed in order to cope with life later on, and thus also the demands placed on it by the technical-medial world. Therefore, as the media pedagogue Heinz Moser rightly says,[7] all modern education is media education. Educational concepts must reckon with the fact that children grow up in a technical-medial world. This does not mean, however, that computers must be present in all education and teaching, as is so often demanded.

The first developmental task of the child is the education and control of its own body; education must therefore support this "physical learning" first. In early childhood, the primary task of education is to offer the child a sufficient number of activities that encourage the development of motor skills, language skills, and a creative imagination in a healthy and comprehensive way. This also includes the development of the senses and consequently the healthy formation of the brain. A development-oriented pedagogy initially excludes everything that hinders healthy bodily development as much as possible. Indirect media education pays attention to the fact that digital media play no or only a subordinate role in the first six or seven years of a child's life.

The pre-school environment should be as media-free as possible. Its task is to encourage children to practice their motor skills, their language skills, and creativity in a variety of ways and thus learn to exercise willpower. At the same time, it tries to exclude everything that could hinder this practice. In a nutshell, one can say that later media competence is rooted in early media abstinence.

This does not just mean "preservative education", but "enabling education", because the children should be stimulated by their environment to engage in a wide variety

7 MOSER, Heinz (2010): Einführung in die Medienpädagogik. Aufwachsen im Medienzeitalter. Wiesbaden, p. 31ff.

of activities on their own, which means that they can be more active than is usually possible in everyday domestic life.

It is often argued that this approach is naïve and unrealistic, because information technologies are an indispensable part of everyday life today. That is true. But this argument also applies to the dishwasher in the kitchen as well as to the car in the garage. The mere statement that a technology is important in everyday life is not a reason for schools to teach the early use of this technology as well, because all technology also has undesirable side effects.

It is analogous to the invention of the automobile. Automotive engineering developed over decades. One can be honestly enthusiastic about the technical level we have reached in the meantime. However, in the early days of the automobile, the possible consequential damage caused by exhaust fumes was hardly considered. Well over a century after the invention of the first automotive engines, people have become very aware of this side effect. The same applies to almost all technologies - they have advantages as well as undesirable side effects. The disadvantages can be overlooked for a while, but over time they cannot be ignored. The same is true for digital technologies. In addition to their undoubtedly practical aspects, they also have undesirable side effects. Responsible pedagogy must necessarily observe and minimize such effects as much as possible.

5.2. Minimizing possible unhealthy influences

If one considers the development of children and asks what promotes their individual physical, mental and spiritual growth, then the premature use of digital devices is pedagogically counterproductive. These are some of the reasons why Waldorf education considers the use of computers in the first years of school to be inappropriate, even pedagogically destructive.[8]

8 BUDDEMEIER, Heinz (1987): Illusion und Manipulation, Die Wirkung von Film und Fernsehen auf Individuum und Gesellschaft. Stuttgart.

SCHUBERTH, Ernst (1990): Erziehung in einer Computergesellschaft, Datentechnik und die werdende Intelligenz des Menschen. Stuttgart.

PATZLAFF, Rainer: Kindheit verstummt, Sprachverlust und Sprachpflege im Zeitalter der Medien, in: Erziehungskunst, 7/8 1999

PATZLAFF, Rainer (2013): Der gefrorene Blick, Die physiologische Wirkung des Fernsehens und die Entwicklung des Kindes; Stuttgart.

HÜBNER, Edwin (2001): Mit Computern leben, Kinder erziehen, Zukunft gestalten. Stuttgart.

HÜBNER, Edwin (2005): Anthropologische Medienerziehung, Grundlagen und Gesichtspunkte. Frankfurt am Main.

HÜBNER, Edwin (2006): Medien und Gesundheit, Was Kinder brauchen und wovor man sie schützen muss. Stuttgart.

HÜBNER, Edwin (2010): Individualität und Bildungskunst, Menschwerdung in technischen Räumen. Heidelberg.

BLECKMANN, Paula (2012): Medienmündig. Wie unsere Kinder selbstbestimmt mit dem Bildschirm umgehen lernen. Stuttgart.

BLECKMANN, Paula, LEIPNER, Ingo (2018): Heute mal bildschirmfrei. Das Alternativprogramm für ein entspanntes Familienleben. Munich.

A large number of international studies as well as practical pedagogical experience have confirmed this view over time.[9]

Brain physiologists also strongly criticize the premature use of computer education, because the use of computers has very serious side effects on the physical development of a child's brain, which can have a negative impact on the child's overall learning behavior later on.[10]

9 For example:

BRADY, Karen (1997): Dropout rise a net result of computers. In: The Buffalo News of 21 April 1997

OPPENHEIMER, Todd (1997): The Computer Delusion, *http://www.theatlantic.com/issues/97jul/computer.htm* (accessed 26 Feb. 2018)

KIRKPATRICK, Heather; CUBAN, Larry (1998): Computers Make Kids Smarter – Right? In: Technos Quarterly for Education and Technology, Summer 1998, Vol. 7, No. 2.

STOLL, Cliffort (2001): Logout, Warum Computer nichts im Klassenzimmer zu suchen haben und andere High-Tech-Ketzereien. Frankfurt/M.

ANGRIST, Joshua, LAVY, Victor (2002): New Evidence on Classroom Computers and Pupil Learning, in: The Economic Journal No. 112 (October), pp. 735-765, 2002,

http://economics.mit.edu/files/22 (accessed 26 Feb. 2018)

LEUVEN, Edwin et al (2004): The effect of extra funding for disadvantaged students on achievement, 2004, *https://www.researchgate.net/publication/45128778_The_Effect_of_Extra_Funding_for_Disadvantaged_Pupils_on_Achievement* (accessed 26 Feb. 2018)

FUCHS, Thomas, WÖßMANN, Ludger (2004): Computers and Student Learning: Bivariate and Multivariate Evidence on the Availability and Use of Computers at Home and at School, *http://www.cesifo-group.de/DocDL/IfoWorkingPaper-8.pdf* (accessed 26 Feb. 2018)

FREIWALD, Ina (2006): Das elektronische Klassenzimmer. Gelebte Zukunft oder Verführung zur Dummheit? Zehn Jahre "Schulen ans Netz". In: Frankfurter Allgemeine Zeitung vom 24.10.2006, p. 42, *http://www.seiten.faz-archiv.de/faz/20061024/fd1n20061024815411.html* (accessed 26 Feb. 2018)

HU, Winnie (2007): Seeing no progress, some schools drop laptops, The New York Times, 4.5.2007 *https://nyti.ms/2oChYxu* (accessed 26 Feb. 2018)

Belo, Rodrigo et al. (2011): The Effect of Broadband in Schools: Evidence from Portugal 2011 *http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1636584* (accessed 26 Feb. 2018)

AFEMANN, Uwe (2011): Ein Laptop macht noch keine Bildung, 12. April 2011 *http://www.theeuropean.de/uwe-afemann/6335-ikt-in-der-entwicklungszusammenarbeit* (accessed 26 Feb. 2018)

MALAMUD, Ofer; POP-ELECHES, Cristian (2010): Home Computer use and the Development of Human Capital, 2010 *http://www.nber.org/papers/w15814.pdf* (accessed 26 Feb. 2018)

Pressetext Deutschland (2007): Pornofilter für 100-Dollar-Laptop, Nigerianische Schüler surften auf Sex-Seiten 24 July 2007 *www.pressetext.com/news/20070724016* (accessed 26 Feb. 2018)

KESSLER, Sarah (2012): 2.5 Million Laptops Later, One Laptop Per Child Doesn't Improve Test Scores, 9 April 2012 *http://mashable.com/2012/04/09/one-laptop-per-child-study* (accessed 26 Feb. 2018)

CHRISTIA, Julián P. et al. (2012): Technology and Child Development: Evidence from the One Laptop per Child Program 2012 *ftp.iza.org/dp6401.pdf* (accessed 26 Feb. 2018)

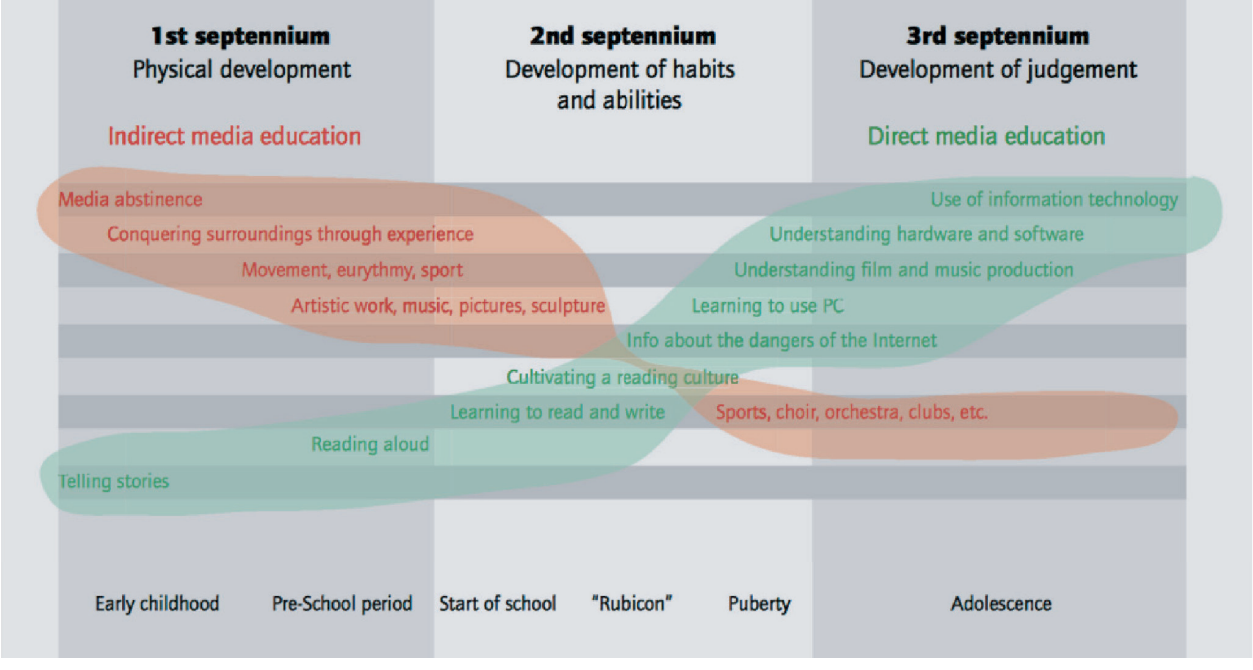
10 SPITZER, Manfred (2012): Digitale Demenz, Wie wir uns und unsere Kinder um den Verstand bringen. Munich.

BERGMANN, Wolfgang; HÜTHER, Gerald (2013): Computersüchtig, Kinder im Sog der modernen Medien. Weinheim.

5.3. Anti-cyclical approach

The fact that many children at home already deal with the media at an early age does not mean that it is necessary for the school to intensify this contact. On the contrary, precisely because of the many ways in which children already use these devices means that kindergartens and schools must first and foremost be careful to create balancing and healthy counterweights. It is increasingly important to promote other kinds of skills in school. The philosopher Gernot Böhme once succinctly formulated this thought by saying that education "must be anti-cyclical, that is, it should promote precisely that which does not lie in the manifested developmental trend."[11]

In the first years of school, indirect media education still has priority. What is often overlooked is that direct media education begins with learning to read and write. The older a child becomes, the more direct media education comes to the fore. The following chart illustrates the principle idea of the interplay of indirect and direct media education.



Source: Bund der Freien Waldorfschulen 2014, Struwwelpeter 2.0

11 BÖHME, Gernot (1999): Bildung als Widerstand, in: Die Zeit, No. 38 of 16 Sep. 1999, p.51.

To illustrate once again the relationship between direct and indirect media education, here's an example: From the age of 12, the majority of young people nowadays start to communicate via social networks.

While the resulting expanded communication possibilities have positive aspects, they also pose dangers because - according to initial studies - they can impair one's ability to empathize.[12] For this reason, a counterweight must be formed at school. Children and adolescents must be able to develop the social skills beforehand in real life that they increasingly need in social networks. The structure of Waldorf education offers special opportunities for intensifying human bonding experiences and developing crucial social skills. The specific timetable of Waldorf Schools with two-hour main lessons structured in so-called blocks; the intensive class theater and music projects; and, in general, the endeavor to enable pupils to actively participate in shaping their school as a real-life social network through many, partly class-independent projects, can be understood as a concept of indirect media education in the face of current challenges posed by virtual social networks.

12 MÖßLE, Thomas; KLEIMANN, Matthias, REHBEIN, Florian (2007): Bildschirmmedien im Alltag von Kindern und Jugendlichen, Problematische Mediennutzungsmuster und ihr Zusammenhang mit Schulleistungen und Aggressivität, Baden Baden.

BUERMANN, Uwe (2007): Aufrecht durch die Medien, Chancen und Gefahren des Informationszeitalters und die neuen Aufgaben der Pädagogik, Flensburg.

MÖßLE, Thomas (2012): „dick, dumm, abhängig, gewalttätig?", Problematische Mediennutzungsmuster und ihre Folgen im Kindesalter, Ergebnisse des Berliner Längsschnitt Medien, Baden Baden.

KONRATH, Sara H.; O'Brien, Edward H.; HsSING, Courtney (2011): Changes in Dispositional Empathy in American College Students Over Time. A Meta-Analysis. In: Personality and Social Psychology Review 15(2), p. 180-198. *http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.723.1682&rep=rep1&type=pdf* (accessed 26 Feb. 2018)

TURKLE, Sherry (2012): Verloren unter 100 Freunden, Wie wir in der digitalen Welt verkümmern, Munich.

TWENGE, Jean M. (2017): iGen: Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy – and Completely Unprepared for Adulthood – and What That Means for the Rest of Us. New York.

5.4. The 12th year of life as a marker point

Indirect media education plays the central role in the first twelve years of life; direct contact with media of all kinds is still in the background and should not be artificially forced. From the age of 12, direct media education becomes increasingly important. At the end of their schooling, the pupils are ready to prove their broadly-educated media competence in a final examination recognized by the state.

Wherever Waldorf education is used as a method, there are no computers in class before the age of 12 worldwide. In the Waldorf pedagogical view, using computers is regarded as just as important as other pedagogical trends, with the difference being that the child's developmental stage is of central importance for dealing with computers independently and meaningfully. Sensible and worthwhile computer use requires the development of independent judgement. This individual ability to judge is not yet developmentally present before the 12th year. Only after this age do additional - mainly organic - maturation processes take place that allow the body and above all the brain to become the basis of one's own judgment processes.[13] Therefore, it is only from the 12th year onwards that it becomes pedagogically sensible and necessary to start using the computer.

13 LEBER, Stefan (1993): Die Menschenkunde der Waldorfpädagogik. Anthropologische Grundlagen der Erziehung des Kindes und Jugendlichen, Stuttgart, p. 443ff.

STRAUCH, Barbara (2003): Warum sie so seltsam sind, Gehirnentwicklung bei Teenagern, Berlin.

6. Direct media education in detail[14]

6.1. Writing as media form

In the summer of 2012, university teachers in Germany complained that although students were good with computers and the internet, they had serious deficiencies in their reading skills.[15] "It is difficult for them to comprehend the central thread of a text [... and they] are not able ... to follow the course of a lecture in their notes in such a way that they can use what they've written again afterwards with profit."[16]

This is where alarming social developments emerge that, in the opinion of many Waldorf educators, are due to the fact that children are allowed to handle highly complex technical equipment too early before they have learned and practiced the basic skills necessary for competent use of computers and the internet.[17] Well-trained reading literacy is the indispensable prerequisite upon which every further educational success rests. "Reading is not only a partial competence of media competence, but also the basic and key qualification that develops and promotes media competence."[18] For this reason, the curriculum of Waldorf Schools attaches great importance to practicing and training the basic skills of writing comprehensively and in a wide variety of ways before digital information technologies are used in the classroom.

14 Vergl. HÜBNER, Edwin (2015): Medien und Pädagogik. Gesichtspunkte zum Verständnis der Medien. Grundlagen einer anthroposophisch-anthropologischen Medienpädagogik. Stuttgart, p. 398ff.

15 PANY, Thomas (2012): Studierende mit alarmierenden Lese- und Schreibschwächen, in: *http://www.heise.de/tp/blogs* (accessed 26 Feb. 2018)

LEHN, Birgitta vom; WOLF, Gerhard (2012): Gute Selbstdarstellung, schlechte Sprachbeherrschung,15.07.2012, *http://www.faz.net/aktuell/beruf-chance/kenntnisse-von-studienanfaengern-gute-selbstdarstellung-schlechte-sprachbeherrschung-11811473.html* (accessed 26 Feb. 2018)

16 TIMM, Ulrike; WOLF, Gerhard (2012): Medienkompetenz sehr gut, deutsche Sprache mangelhaft, Studie fördert bestürzende Lücken bei Studienanfängern zutage, in: *http://www.dradio.de/dkultur/sendungen/thema/1818985* (accessed 26 Feb. 2018)

17 Beispielsweise:

HENTIG, Hartmut von (1993): Die Schule neu denken, Eine Übung in praktischer Vernunft, Eine zornige, aber nicht eifernde, eine radikale, aber nicht utopische Antwort auf Hoyerswerda und Mölln, Rostock und Solingen; Munich, Vienna, p. 32ff.

POSTMAN, Neil (1995): Keine Götter mehr, Das Ende der Erziehung, Berlin.

LIESSMANN, Konrad Paul (2014): Geisterstunde: Die Praxis der Unbildung. Eine Streitschrift. Vienna.

18 HRADIL, Stefan (2009): Die Bücher, das Lesen und die Wissenskluft, Befunde, die niemanden überraschen können, aber alle beunruhigen sollten, in: Stiftung Lesen (Ed.): Lesen in Deutschland 2008, Eine Studie der Stiftung Lesen, Mainz.

In the first grade, the children learn how to write and how to read the written word, starting from an active artistic activity. From the second and third grade onwards, the acquired writing and reading skills are continuously practiced. It is recommended to set up a "class library" in the classroom, so that children can lend each other the books they are interested in. It is also very advantageous if there is an in-school library where one can find and borrow all kinds of reading material. Reading circles specially set up for reading beginners significantly contribute to the cultivation of a reading culture.

From the fourth or fifth grade it is important that children begin to understand what it means to "do research". Not everything by any means can be found on the internet. There are huge treasures of knowledge hidden in libraries that are not accessible electronically. That is why it is important for children to become familiar with libraries and to get an idea of how to find something in real books.

In seventh grade, students should develop the ability to touch-type with ten fingers on the standard keyboard, at least as long as computers are still operated with keyboards. Furthermore, in the following years they should gradually understand how to use the various possibilities of word processing programs.

Summarized in short form in a table:

First grade	Learn to read and write.
From the second or third grade	Build a class library. Set up a school library. Encourage reading and cultivate a reading culture.
From the fourth or fifth grade onwards	Get to know and practice research in book collections and libraries.
Seventh grade	Learn to master 10 finger touch-typing on the keyboard.
Eighth grade	How to structure a letter of application, a curriculum vitae, a business email
Eighth or ninth grade	Create an internship report with a word processor and practice the most important layout functions of a word processor.

6.2. Images as media form

Great importance is attached everywhere to the best possible mastery of script. But there is not the same general awareness that an image as media form must also "be read". Just as children learn to understand texts, they also need to know how statements in pictures come about and how they can be understood.

A curriculum oriented towards child development begins when children first learn to create pictures through their own (analogue) artistic activity. This starts in the pre-school period by painting simple motifs with wax crayons or watercolors. In the early school years, when children are able to develop an aesthetic feeling, this activity is continued and deepened. Children learn to distinguish different color shades and color tones and to judge these aesthetically. As they grow older, their own paintings and drawings become more differentiated and varied. At about the age of twelve (6th grade), the laws of projection and shadow theory have been introduced. By means of specific drawing problems children learn to handle the laws of perspective practically. In the eleventh grade, this practical understanding is taken up within the framework of projective geometry and mathematically expanded and reinforced.

From the ninth grade onwards it makes sense to study the language of photographic and cinematic images with young people, again by means of concrete projects. The aim is for them to learn to analyze and understand the procedures of professionally produced films by producing their own films. Above all, young people should understand the structure and function of advertising.

Summarized in tabular form:

Preschool period	Simple painting with wax crayons or watercolors.
The first years of school	Getting to know the color of sounds. Painting with watercolors. Drawing images with wax or colored pencils. Increasing differentiation of image designs.
From 6th grade	Beginning to learn the theory of projection and shadows. Practical tasks are used to get to know and handle the laws of perspective.
From 9th grade	Learning the language of photographic and cinematic images from the practical handling of concrete tasks. Analysis of films. Make your own movie. Learning to understand the structure and function of advertising with images. Analysis of advertising spots.

6.3. Sound as media form

Listening to music is one of the most important leisure activities for almost all young people. It is therefore critical for children and adolescents to be able to judge the media form "sound". Here, too, this ability to judge is based on one's own (analogous) activity. Already in the preschool period, children sing together with other children, and acquire a more or less large repertoire of songs.

In the first years of school, singing and making music continue to be cultivated and the songs available to children are systematically expanded. In their early schooling, children also learn to play simple musical instruments such as the recorder. A challenging instrument such as violin or piano often follows, so that children develop as broad a spectrum of musical abilities as possible and gain the respective practical experience in producing sound.

From the fourth or fifth grade onwards, the intellectual penetration of musical experiences begins with musicology. From the eighth or ninth grade onwards, young people get to know the musical culture in as many aspects as possible. They understand the historical genesis of musical creation up to contemporary music. It is important for them to be able to analyze contemporary light music and to understand the function of film music in the design of a film plot.

As part of a student project, research on a topic can also lead to the production of a radio feature that can then be broadcast on a local radio station.

The basic form of the curriculum of "sound as media form" is summarized below:

Preschool period	Simple singing together
The first years of school	Singing, building and extending the song repertoire. Making music with a simple instrument, such as a recorder. Practicing one's own instrument.
From the 4th / 5th grade	Beginning of musicology, knowledge of the laws of music. Getting to know the musical culture in all its facets, from how it has grown historically to contemporary music.
From 9th grade on	Analysis of contemporary light music, analysis of film music, production of a radio feature.

Media competence means more than development of an intensive relationship to and mastery of media forms; it also includes an understanding in principle of how media work.

6.4. Understanding media carriers

Waldorf education has a decidedly positive and constructive relationship to technology. In his lectures on methodological-didactical questions, which preceded the founding of the Waldorf School in 1919, Steiner discussed the relationship between people and technology. He emphasized that it is extremely important to consider the subconscious mental attitude to technology throughout life.

"Just think how many people today travel on electric railways that don't have a clue of what electric rail travel is actually based on. Imagine how many people today only see the steam engine in the form of a locomotive passing by, without having any idea of how the physical and mechanical effect that causes the steam engine to move around takes place. [...] This fact that we do not understand something created by man, which is basically the result of human thought, has great significance on the entire human soul and spirit. People only have to anaesthetize themselves so that they do not perceive the effects coming from this side."[19]

For educational purposes, Steiner concludes that we must counteract such a phenomenon of civilization in a compensatory way:

"We can only work against these things if we already begin to counteract them at the last stage of elementary school teaching; if we really do not let the child out of school in the 15th, 16th year without at least having some elementary concepts of the most important directions in life. So that the young person has the longing to be curious at every opportunity about what is going on in his environment and then to gain knowledge out of curiosity and interest."[20]

One must learn to understand the principles of technologies used in everyday life. One must be able to go through life with the feeling that, in principle, one can understand the objects and processes in the environment. This feeling has important consequences for the spiritual life of human beings, as Steiner pointed out:

19 STEINER, Rudolf (1975): Erziehungskunst, Methodisch-Didaktisches, GA 294, Dornach, p. 161f.

20 STEINER, Rudolf: (1975) Erziehungskunst, Methodisch-Didaktisches, GA 294, Dornach, p. 162f.

"This affects the security of one's actions. It has an effect on the security of how one places oneself in the world. This is very important for human will and the ability to make decisions. No profession can be practiced by people with capable and hard-working initiative if they are not positioned in the world with a secure feeling that they have at least acquired some knowledge, no matter how primitive, about things not belonging to their profession."[21]

It was a central pedagogical concern of Steiner that young people should be able to acquire a secure hold on life during their school years. Elsewhere - even before the Waldorf School was founded - Steiner expressed this unequivocally:

"The study of life must be taught by everyone. For young people between fifteen and twenty, teaching will continue in a reasonable, economic way concerning everything that relates to agriculture, trade, industry, commerce. No human being should be allowed to pass through this age without having an idea of what happens in agriculture, in commerce, in industry, in trade. These things will have to be built up as disciplines that are infinitely more necessary than much of what now fills the curriculum during these years."[22]

People must learn to understand the principles of the techniques used in their everyday life. They must be able to go through life with the feeling that at least in principle, they understand their environment. And in the 21st century, computer and information technologies will definitely be among these things that are necessary for everyone to basically understand.

Therefore, the basic intention of Waldorf education is to convey an understanding of the principles of these techniques. From the very beginning, the Waldorf School taught the functional principles of important everyday devices, such as engine technology, communication technology, screen technology, etc., both in physics lessons and within the framework of specially established technology lessons. It was a matter of course that as early as the mid-1980s Waldorf teachers were looking for ways of discussing the subject of "computers" in school in terms of teaching methods.[23] Since that time, teaching about computers and computer technology has been introduced in Waldorf schools from the 9th grade onwards.

21 Salutogenic research based on the work of the Israeli medical socialogist Aaron Antonovsky found clear indications that the comprehensibility of the world represents a significant aspect of one's sense of coherency in life, which also has an essential impact on physical health.

22 STEINER, Rudolf (1964): Geisteswissenschaftliche Behandlung sozialer und pädagogischer Fragen, GA 192. Dornach, p. 98.

23 Ernst SCHUBERTH summarized the considerations at the time in his fundamental publication „Erziehung in einer Computergesellschaft – Datentechnik und die werdende Intelligenz des Menschen" (Stuttgart) in 1990.

These pedagogical ideas were implemented individually in the schools depending on the personnel and material possibilities, so that Waldorf schools did not have a detailed, generally binding curriculum, but shared a common approach, including the consensus that an introduction to computer technology should be based on the practical handling of electronic components and devices.[24]

This means, for example, that at the latest in the ninth grade the touch-typing system should be learned and practiced; in the 10th or 11th grade basic circuits of computer technology (NOR, OR, NAND, AND, half-adder, full-adder, flip-flop, etc.) are built and examined by the students within the framework of a practical teaching block with the help of relays or transistors, in order to subsequently figure out how microprocessors operate. In the 11th grade, a programming internship is included in the timetable at many schools.

The basic concern here is to show how the machine transforms "computer" formalized human logic into a sequence of physical state changes. Looking at this implementation, it becomes evident that only human thinking can meaningfully interpret these interdependencies among states and final states.

24 In the revised 4th edition published in 2016 concerning the general framework curriculum for Waldorf schools, the previous considerations put forth by Florian SCHULTZ et al. were summarized. See: RICHTER, Tobias (Editor) (2016): Pädagogischer Auftrag und Unterrichtsziele – vom Lehrplan der Waldorfschule. Stuttgart, p. 675ff.

A possible media curriculum is shown in the following table:

First school years	Practical experience of creating paper.
7th or 8th grade	Practical bookbinding.
9th grade	Understanding the binary system in mathematics. Learning how the telephone works in principle.
10th grade	Learning to understand the basic structure of a CPU. Learning about historical and cultural aspects of computer technology.
11th grade	Programming internship to learn how to practically understand the basic ideas of how to algorithmically capture and simulate life processes. Physical basics of the tube screen. Radio technology up to mobile phones. Basic principle of digitization of speech and TDMA process.
12th grade	Internet structure, history and principal thoughts about how news, images, sounds, etc. are transported from one place to another. Basic aspects of big data. Basic ideas of neural networks and artificial intelligence (AI). Physical basics of the flat screen.

Computer science in Waldorf Schools is practiced not only as theoretical and practical media education. Computers will also be used as educational media as the internet continues to expand.

6.5. Using media sensibly

How a possible curriculum “Using media sensibly” could look is summarized below:

From first grade	Make a notebook page attractive, balanced and neat. Structure and design a main lesson notebook or a project booklet in a meaningful way.
From fifth grade	Finding books and using them for own independent research. Using the blackboard or pictures meaningfully in the context of a presentation. Giving regular small presentations on various topics.
Discuss from 8th/9th grade, include from 10th/11th grade in class.	Researching on the net with search engines, types of search engines, basic procedures and points of view when searching, getting to know subject portals and meaningful research portals. Being able to apply criteria to check the credibility of websites. The topic of source criticism is treated again at appropriate times in the classroom. Correspondence on the internet. Netiquette. Creating a business email. Letters of application. Learning how to formulate meaningful subject headers. Browser security settings. Security in networks.
10th grade	Practical testing and critical discussion of presentation techniques with PC, overhead, flipchart, blackboard, whiteboard, etc. Using presentation software sensibly, knowing the individual strengths and weaknesses. Learning how to avoid presentation errors. Getting to know aspects of how to arrange file inventories in a meaningful way. Knowing the differences between the diverse file formats.

6.6. "Internet Driving License"

Representative studies in Germany[25] show that children around the age of 12 shift their media preference from television to computers and the internet, and navigate largely alone on the internet. Therefore, at this age it is important that the children achieve a kind of "Internet driving license".

The basic didactic goal is the development of media awareness. Media awareness is the ability to distinguish between reality and fiction. This includes above all the insight that the virtual online world and the real "offline world" have different rules.

The "Internet driving license" should cover the following topics:

Dealing with contacts on the internet: security rules in chat, rules in dealing with social networks, "netiquette"

Protection against internet bullying

Protection of one's own data and that of others

Publication with pictures in the net: rights and obligations

Copyright information: what is protected, what is free, what is a criminal offense.

Criminal law: which publications are forbidden.

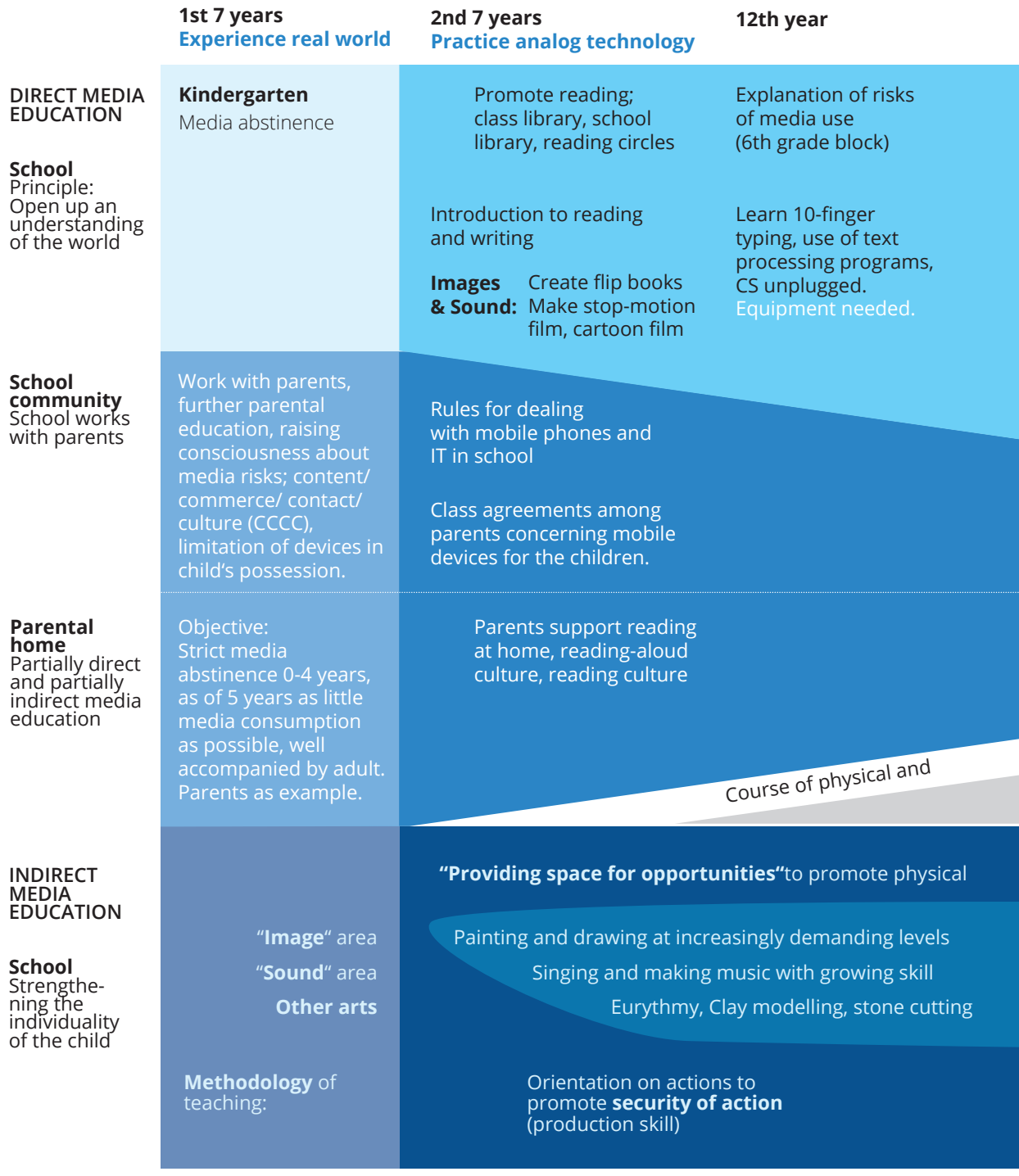
Search engines: learn to deal with search engines, get to know the different search engines

Learn how to judge the trustworthiness of websites

Particularly in the upper grades, many teachers incorporate the possibilities of the internet into their lessons where it makes methodical sense. For example, from the 8th/9th grade onwards, various presentation techniques, including computer-based ones, are increasingly practiced and their advantages and disadvantages critically examined in presentations. In the context of oral graduation examinations (e.g. in the Federal State of Hesse), these skills are specifically tested in a presentation.

25 Most recently: KIM-Studie 2016, Kinder + Medien, Computer + Internet, Basisuntersuchung zum Medienumgang 6- bis 13-jähriger in Deutschland, Stuttgart 2017.

6.7. Summary: An overview of the media concept in Waldorf schools



3rd 7 years
Understand and master digital technology

Understand principles of computer hardware and internet structures.

Programming internship. What is an algorithm? Understand principle of AI neuronal networks. Equipment needed

Ability to use IT technology for further education and presentations. Know viewpoints for critical reflection. Equipment needed.

Understand principle of mobile phones. Good timing: 11th grade physics block.

Photo group, create films, analyze ad films. Technical equipment needed

Analyze film and light music. Prepare a radio feature show. Equipment needed

WLAN at school (to be looked at very critically), is LAN maybe better?

Time limits for internet access. Filter software?

Gradual release to independence in handling IT technology on one's own.

psychosocial maturity on which media education is based.

Extra-curricular "**probation areas**": Sport associations, choir, orchestra, volunteer fire department, voluntary youth organizations

and mental maturity.

→ Understanding of contemporary painting
→ Understanding of contemporary compositions
→ Understanding of contemporary modelling

security of understanding based on experience of action

through embedding in overall contexts, experience of **meaningfulness**

First: Reduction of screen time according to the child's physical and psychosocial maturity.

Then: Prescribed by the educator during childhood.

Finally: At the end of adolescence, own independent decision.

Non-media offers and challenges to promote physical and psychosocial maturity.

7. Becoming human in a world marked by digital technologies

Two great waves of digitalization have changed the foundations of everyday human life.

The first wave broke at the beginning of the 1990s when, with the development of the World Wide Web, the internet became "suitable for household use". It then conquered the residential workrooms and home offices by the end of the century. At the same time, mobile phones became suitable for the masses. Sales exploded. By the beginning of the new millennium, almost all households had a PC and a mobile phone.

The launch of the iPhone in the summer of 2007 marked the beginning of the second wave of digitization: Internet and mobile telephony came together. The internet found its way into people's jacket pockets and became a ubiquitous companion.

Currently, a third wave of digitization is now beginning. In May 2017, Sundar Pichai, CEO of Google, announced that the era of smartphone supremacy would come to an end and the era of artificial intelligence (AI) would begin: The "Mobile-First-World" will be replaced by the "AI-First-World". Devices will become people's consultative partners.

In fact, the development of AI technologies has advanced significantly. If current developments continue unhindered, people's everyday lives will change fundamentally in the next 10-20 years. Many jobs will be lost because "intelligent" machines can work cheaper and faster. Only a few demanding new jobs are being created. Many people will be forced to find meaning in their lives independent of gainful employment.

All of this puts human education, especially school education, to the test. School no longer will prepare primarily for a future labor market, which will largely disappear. The old saying: "We learn for life" must be understood anew. What does it mean in the future to "learn for life"?

In the future, people will be very much more on their own, and will need to shape their lives according to their own individual judgements, initiatives, and above all abilities. The question of human education in a society shaped by digital devices has therefore become a central question today and goes beyond the problem of how to handle devices competently.[26]

The media pedagogue Dieter Backe, who introduced the concept of media competence into the discussion, issues a warning at the end of his work on media education that has so far received scant attention:

"The competence criterion can easily be rationally narrowed down. The physicality of the human being or his emotions are often not taken into account. On the contrary, these areas are initially switched off: [...] . Isn't there, of course, a human being's competence of dealing with his body appropriately?[27]

Waldorf education pays particular attention to this warning. The question of the development of human self-competence in the realm of learning is central to Waldorf education, as it is to all pedagogy. The main issue is how to achieve the pedagogical goal of self-competence.

Waldorf education thus stands in contrast to other methodological views. For a pluralistic and democratic society, the existence of different, even competing views is vital.

It is also necessary for scientific studies on media education to include control groups that have other methodological approaches in the field of media education.

Looking back on its 100th anniversary, Waldorf education can certainly refer to its successful work worldwide – and this will also apply in the future to its educational approach on media.

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27 BAACKE; Dieter (2007): Medienpädagogik. Tübingen, p. 100.

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