



Universal Human Nature

The Challenge of the Transition from Kindergarten to Elementary School

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The global trend toward early schooling and the pressures on children to become early learners have grown considerably in recent years. Several factors have played into this, including the shock of PISA results;¹ the trend toward quality assurance in education through the introduction of standards; and the effects of globalization. Many countries have realized that if they want to compete they must have a better educated workforce. Their unquestioned assumption is that the earlier they start their education the better.

The Lack of a Unifying Image of the Human Being

These external political factors are powerful. What makes the trend to earlier schooling harder to counter, however, is the fact that the science underpinning our understanding of what it means to be a human being, and, in particular, what it means to be a young, developing human being, has also fundamentally altered. In the post-modern age, there is no consensus about human nature, no unifying theory, and not even an agreed-upon framework for development. Geneticists discover ever more structures within the human genome that influence this or that behavior or developmental pattern, but they have not found a universal timetable for children's growth. The clearest characteristic of the human being to emerge from contemporary genetics is just how plastic, flexible, and variable human beings are. One could say that which is universally human is essentially individual.

Brain science and developmental psychology have given us a picture of children actively co-constructing their minds, their language, and

their social relationships from the earliest weeks after birth.² Evolutionary psychology has offered us a picture of the origins of many human behaviors.³ The picture we have is dynamic, an interaction between genetically predetermined potential, self-activity, and social context. Even the concept of "critical periods" in development, periods in which specific behaviors or skills, including language, can emerge, are apparently far broader and more flexible than had been imagined.⁴ It is not surprising, therefore, that traditional ideas about developmental phases and thresholds such as school readiness are increasingly less tenable.

This general situation also applies specifically to the question of school readiness. Armin Krenz, an early years specialist at Kiel's Institute for Applied Psychology and Pedagogy, recently summed up a survey of theory and practice regarding school readiness with the word "chaos." "If it wasn't such a serious matter one could smile at the contradictions in the statements [of experts]—which rather cause us to frown."⁵

The Pedagogical Need to Review School Readiness

In 1998, the International Curriculum Research Group (ICRG) of the Pedagogical Section at the Goetheanum, Switzerland, responded to these

trends by beginning an informal study in the form of hearings. As coordinator of the ICRG, I became closely involved in the issue of school readiness and, coincidentally, was commissioned to write a book on the subject.⁶ What became apparent in the course of our research was the fact that there seemed to be good reasons to examine the transition from kinder-

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garten to school, irrespective of trends in public education policy. The main reason for this was the manifestly different circumstances that influence child development today.

As a symptomatic example of this trend, Hergart Asamoah, a school doctor with some 35 years experience investigating children for school readiness in a large German Waldorf school, reported to us, from her records, that 20 years ago only about 7 children out of more than 100 applying for school admission were found to be “not ready,” according to a detailed list of criteria regularly used in Waldorf schools to establish school readiness. In 2001, from a similarly large intake from similar family backgrounds, only about 20 percent were deemed to be ready, according to the same criteria. Clearly, something has changed. This anecdotal study—compellingly apparent when Dr. Asamoah showed us children’s drawings from then and now—highlights the problem.

The ICRG, constituted of teachers, early childhood educators, teacher educators, and school doctors, explored the issues for several years in a series of regular meetings. This led to the publication of a small booklet entitled *Guidelines for School Readiness*, followed by a revised edition especially prepared for the International Conference for Teachers at the Goetheanum at Easter 2004.⁷

Are Children Different or Do We Just See Them With Different Eyes?

Are children today really different when compared to those of a generation ago, or even compared with those of 5 years ago? The question is almost impossible to answer scientifically without major long-term studies that would take into account emotional and physical development and socioeconomic changes. Nevertheless, considerable anecdotal evidence suggests that Waldorf educators believe that children are somehow different. That we believe today’s children are different no doubt influences the way we see them, think

about them, and act with them. Are children really different or are we looking with different eyes and expectations? This is not an easy question to answer.

Last year, a research group of which I am a member was commissioned by the Association of Waldorf Schools in Germany (the Bund) and the International Kindergarten Association (IVW) to investigate the issue of school readiness in the context of new legislation that lowers the age of compulsory schooling and that imposes mandatory state curricula. The group began by carrying out a survey of kindergarten teachers, school admissions officers, and school doctors in German Waldorf schools. The results showed that most educators believed that today’s children are different in how they develop. This confirms Dr Asamoah’s findings. Different, essentially, is taken to mean less harmoniously developed by the age of six, the age of school entry. In the past, a few school age children could be allowed to spend a further year in kindergarten in order to mature. Today, this would mean leaving the majority behind; with the consequence that the grades would be empty and the kindergartens overflowing!

This perception that children are not ready for school has also led many Waldorf schools—to my knowledge currently over 50 schools—in Germany, Switzerland, and Austria to introduce new “moving classroom” methods, also known as the Bochum Model, into the elementary school, an approach which replaces desks and chairs with more flexible school furniture—especially designed benches and cushions—to facilitate more movement. This model also involves more practical activity to stimulate the development of the basic bodily senses of movement, balance, touch, and vitality (sense of life), as a precondition for the healthy development of higher faculties. For some years the perception has existed that children entering first grade lack basic competences, particularly in their motor development, but also in their social skills. The moving classroom approach is an attempt to address these deficits through restructuring the approach to teaching.⁸

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How Different Are the Children?

The extent to which the evidence from Germany can be extrapolated as relevant for the U.S. and other countries can best be judged by observers and practitioners in those countries. My guess is that the evidence is similar elsewhere because similar external conditions influence child development in most modern Western societies.

Our survey,⁹ which includes responses from educators in more than 130 kindergartens and representing 84 schools, comparing children today with those of 10 years ago, finds children to:

- be less coordinated, have poorer fine and gross motor skills, and be clumsy;
- have more speech and language difficulties, be less able to listen, yet often have more to say for themselves;
- have shorter attention spans and be more often unruly;
- show more signs of nervousness and inability to concentrate;
- have poorer abilities to imitate, have poorer abilities to play and imagine;
- be more prone to infections and allergies;
- be often prematurely intellectually awake, requiring a more individual approach;
- be harder to integrate socially into class groups; such children often show what is described as a lack awareness of the space of other people;
- show greater differences between the genders, with boys generally experienced as more difficult.

A small but significant number of colleagues commented on new positive qualities that such children bring with them, such as spiritual openness, curiosity, openness for experience, and a surprising level of self-reliance. These observations are as important as the deficit analysis.

While there are still many robust and healthy children in our kindergartens and schools, children increasingly show signs of disassociation in their development; that is, various areas of development seem increasingly to develop more heterogeneously and less harmoniously.¹⁰

Changing Circumstances

In a period of significant social and cultural change, the conditions under which children grow up today are undeniably different compared to those of a generation ago. What has changed?¹¹

Increasingly pluralistic social and economic forms coupled with simultaneously increased individualization of personal roles and expectations have changed the way we live and work together.

Many more children are “only” children, live in patchwork families that undergo frequent career changes, and live with little structure and rhythm in their lives and little sense for boundaries.

Parents’ attitudes toward their role have also changed; an increasing number of parents treat their children as partners and, in other ways, expect a high degree of self-reliance.

Media consumption has radically increased, and children suffer overstimulation of their senses through electronic media more greatly than has any previous generation.

The World Health Organization (WHO) has frequently pointed to the unhealthy life styles and diet of children in many Western and [post]-industrialized economies.

In addition to these socio-economic factors, there is considerable evidence of general changes in children’s life patterns, such as the decreasing age of the onset of puberty and the general divergence between psychological and physical maturation.¹²

How to Respond?

It is obvious that these changes influence the way children develop. It is equally obvious that educational practice must respond to these changes, or at least review its methods and approach, and ask the question, “Are we sure we are doing our best to provide children with the best possible developmental environment in kindergarten or in elementary school?” Researchers in Waldorf education have begun to develop techniques of research and evaluation that can address this challenge.¹³

Many educators and politicians recognize these trends and respond by saying we must identify children’s developmental needs and remediate them earlier, not waiting until children are in school. Governments are concerned with declining

standards for a variety of reasons. Among the factors of most concern is the overwhelming evidence that poverty, neglect, and social exclusion influence child development and thus school achievement. In the U.K., the government drew up a “Framework for Early Learning;” in Germany the Conference of Federal State Education ministers drew up “Educational Standards for Early Years Education;”¹⁴ and in the U.S., the first goal of the National Education Goals Panel (NEGP) was that, “by the year 2000, all children in America will start school ready to learn.”¹⁵ These are typical of many international responses.

In the case of these policies, the concept of school readiness is not limited to a narrowly constructed, academically-driven definition of readiness, as is sometimes asserted in Waldorf school circles, but includes a broader definition that includes physical well-being and health, social and emotional development, language development, and cognitive readiness. In the case of the NEGP approach, a strong emphasis was also placed on schools being ready for children and on a supportive family and community context.¹⁶ These are laudable policies. So, too, is concern about the danger of applying assessment methods to the early selection and the labeling of children. The NEGP noted that assessment should only be used for diagnostic purposes and that testing should be supplemented with other sources of information, including information from parents and teachers.¹⁷

The Waldorf School Response

Within the Waldorf school community two responses can be identified, although some schools carry on as if nothing has changed. On the one hand, there have been attempts to exclude Waldorf school settings from legislation that lowers the school entry age or where funding is pegged to certain curriculum requirements. Here, Waldorf school negotiators have often been successful in gaining special status and even, on occasion, of influencing the formulation of the standards. Here, England, New Zealand, Norway, and the German Federal state of Baden-Württemberg are examples.

On the other hand, a reassessment of Waldorf school practice has begun, such as the introduction of moving classroom methods

referred to above. This reassessment has also led to the introduction of new forms of transition, such as the introduction of transition classes—*Brückenklassen* (literally, “bridge classes”)—in some German Waldorf schools. Without adequate and appropriate methods of pedagogical evaluation, however, and without a clear set of criteria, these innovations depend largely on the conviction of their practitioners. It is also noticeable that much of the impetus for innovation comes from the schools and relatively little from the kindergarten movement.

In essence, the Waldorf school movement needs both to address its theoretical basis and review its current experience with children. It requires a reassessment of the concept of development that informs our educational approach. If the socio-economic factors listed above—and, perhaps, spiritual factors yet to be fully identified—can influence developmental patterns and lead to developmental dissociation through acceleration of some traits and retardation of others, how should an educational approach based on an age-related and developmentally orientated framework such as Waldorf education respond?

Steiner’s Concept of School Readiness

The concept of school readiness in Waldorf education is now essentially at odds with the various and often conflicting definitions used in mainstream education. The Waldorf school approach, here very briefly summarized, is based on Rudolf Steiner’s descriptions of the significance of the first seven-year period of life and its transition to the next major developmental phase, as indicated by the change of teeth. In his own words, Steiner explained the significance of this developmental transition as follows:

When the change of teeth occurs we see in a certain way the emancipation of the child’s etheric body. How does that come to expression? What comes to expression is that the child becomes able to form concepts and becomes able to bring movement into the process of mental imaging within the head organization that was earlier more integrated into the whole organism. We see approximately—and spiritual science sees this not only approximately but in reality, that the etheric forces withdraw at the change of teeth from

the head, while remaining in the [bodily—author's addition] rhythmic and metabolic-limb processes, and develop a free [i.e., non-bodily—author's addition] activity in the plastic formation of the head processes in which consciousness participates in mental activity. In a certain sense the head organization is freed at this age. And if I can express this process that really occurs in pictorial form, I would say that that which is driven out from within the whole organism to the surface and expresses itself in the second teeth is the result of the soul-spiritual processes that were previously active within the whole organism and are now freed in the head. Previously they penetrated the whole human being including the head. These forces gradually withdraw from the head and this process of withdrawal, which stops at the head, brings forth the second teeth. ...What occurs in human development does so in the most manifold forms of metamorphosis.¹⁸

The key concept here is the metamorphosis of the formative forces, Steiner's "etheric forces," from activity in the growth and development of the physical organism through withdrawal from the physical processes in the head, essentially the activity of the brain. These forces, once freed from the brain, not entirely but significantly, can now work at a higher level in shaping and forming mental processes such as memory, mental imaging, and concept formation, all of which are fundamental prerequisites for formal school learning. The forces freed at the organic level become active at the psychological level of mind.

What Steiner does not say in this quotation, but that is clear elsewhere in his work and here by inference, regards the negative consequences of withdrawing these forces from the organism too early. The long term, sustainable, and renewable health of the child will be negatively affected if the formative forces are withdrawn from the organism too early and the head or brain is taxed with the demands of premature intellectual activity too soon. A child is ready for school in Steiner's understanding when these formative forces have metamorphosed themselves sufficiently to become available for learning.

School readiness is a sign of a fulfilled childhood, as Armin Krenz put it.¹⁹ Steiner's idea of school readiness certainly also implies that schools be ready for children, that is to say, offer

an age-appropriate, artistic education in which the child's intellect is addressed through activity and through pictures.²⁰

How does this approach differ from that typical of mainstream education? A brief history of the term "school readiness" will be necessary.

A Short History of School Readiness

In the German language, two words are used in relation to school readiness: *Schulreife*, literally, "school maturity," which implies an organic ontological development and *Schulfähigkeit*, literally, "school ability," which describes the cultivation of certain competencies. This distinction is helpful in identifying two quite opposing views that have worried generations of psychologists and educators trying to define school readiness.

In simplistic terms these are two fundamentally different approaches. The maturity theory explains age-related behavior and ability as essentially the outcome of biological processes following a genetically determined timetable. The alternative—one could speak of a socialization theory—is to see the acquisition of school readiness as social-cultural competence.

In the first half of the last century, it was common to relate school readiness, and most other patterns of development, to certain physical symptoms of maturity, in particular to the proportions of the trunk to arms and legs, what was known as the change of body shape, *Gestaltwandeln*, literally, "form change," that statistically occurred around the sixth year.

Augustin Kern's concept of maturation,²¹ for example, assumed that:

- School readiness is the result of endogenously directed maturational processes;
- Each child in the course of her development uniquely reaches a developmental stage that is the precondition for the development of school readiness, which may vary individually;
- The various competencies usually mature synchronously and that identifying maturity in one area is a reliable indicator of other areas (e.g., bodily maturity, such as onset of second dentition). Kern's choice of indicators is a visual representation of one's own body as indicated by a child's drawing a picture of himself;

- School readiness cannot be hastened through teaching.

In effect, this view is akin to the image of apples ripening on a tree and falling when they are ready. Many today still hold the view that school readiness is a trait that one can easily identify.

Implicit in the maturity theory, however, is the idea that the outcome of maturation is the fully developed human being. Unfortunately, not all researchers of either the school of maturity theory or of socialization theory have taken the view expressed by doctor and educator Janusz Korczak. Korczak believes that we should not see maturation processes as a progression from lower to higher, from incomplete to complete; we should value each stage of child development as an entirely valid state in its own right:

How should the child be able to live tomorrow, if we don't consciously and responsibly let him or her live today? We should respect every moment. . .

. . . Crudely we divide the years into more or less mature. There is no immaturity today, no hierarchy of age, no higher or lower level of pain or hope or disappointment. If I play with a child or speak to him or her—then two equally valid moments of maturity in my life and in that of the child have united.²²

Once it becomes clear, however, that certain features associated with school readiness can be trained,²³ such as the ability to distinguish certain forms—e.g., as in a child's drawing of herself showing limbs and fingers—maturity theory is fatally challenged. Readiness is susceptible to learning. The aim is therefore no longer simply to identify and select children who are ready for school but to “modify” children, “which means optimization through changing the behavior or changing the conditions.”²⁴ This marks a paradigm shift in the question of school readiness and establishes the need for a differentiated remedial or therapeutic provision prior to school entry, which leads, in turn, to the development of detailed diagnostic instruments.²⁵

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Horst Nickel established the most widely accepted view of school readiness in Germany.²⁶ He describes the problem from an ecological perspective, and describes school readiness as an interactionist construct. This means, first, that the question does not require us to look only at the child, but at the child's whole context. Second, it was assumed that school readiness is not necessarily directly observable, but rather could be deduced from a study of a range of factors and indicators relating to the context of the school and the child's personal and family context in mutual interaction. Nickel, himself, noted that the issue of school readiness is to a large extent not a problem in a school system that addresses the child's individual needs, such as in Montessori schools.²⁷ Indeed, studies have shown that children with similar levels of school readiness on tests achieve different levels of success in different

classes, even in parallel classes at the same school.²⁸

School readiness, following these arguments, is neither a purely biologically nor a purely culturally determined state. It reflects the norms of both pre-school and elementary school, and it is significantly influenced by socio-economic and family-based factors. School readiness,

therefore, can vary considerably. The key question in relation to the influence of state curricula is the extent to which the child is exposed to and influenced by binding socio-cultural developmental norms that traditionally have been seen as the task of school to cultivate.²⁹

School readiness is a form of cultural pressure³⁰ since children are obliged, at some point, to go to school and must therefore attain certain pre-determined developmental norms. The degree of pressure is determined by the education system. What we have today is a concept of school readiness as a developmental task, the timeframe for which is determined by the statutory school entry age and the criteria for which are determined by the nature of the school the child is to be prepared for. School readiness is therefore situation specific.³¹

Most interesting, in this respect, is a study based on the Australian program, *Who Am I?*,³² a diagnostic test developed by the Australian Centre for Educational Research (ACER) to identify children at risk. This has also been used to compare the developmental patterns of children in different cultures. In a detailed report of such an international comparison of child developmental patterns, published on the Government of Canada website (2002),³³ de Lemos questions whether the shift in thinking marked universally in children between five and seven is a consequence of schooling, in the widest sense, or, rather, the basis for schooling. De Lemos declares the question to be as yet unresolved. He concludes, however, that, “while there are differences in children’s cultural and social experiences across different countries and social groups, there are, nevertheless, commonalities in development that seem to be associated with underlying developmental processes.”³⁴

The crucial result, however, from the Waldorf school perspective, is that revealed by the *Who Am I?* study, which shows that “exposure to highly formal teaching programs at an early age leads to an acceleration of development.”³⁵ What the evidence seems to show is the interactive effects of age and education. Both factors mutually influence the other, as one would expect in any holistic model of human development. Education influences developmental processes and developmental processes naturally determine what is educationally possible.

Further, many authors now prefer to see readiness as a “bidirectional process of both school and child flexibly adjusting to each other to ensure success.”³⁶ This approach is based on Vygotskian socio-cultural theory³⁷ and contemporary transactional models of child development.³⁸ Vygotsky showed that learning precedes or leads development and transforms biological maturational processes, a view that modern neurology has confirmed.³⁹ The Vygotskian approach offers children social opportunities and scaffolded experiences. “Scaffolding” refers to a non-directional style of supporting a child in exploring the next level of skill rather than giving direct instruction.⁴⁰ In other words, a child does not simply grow into readiness but is gently exposed to situations in which she can acquire new skills and ways of being.

A new approach to school readiness, developed in the U.S., sees as decisive the socio-cultural

context rather than innate qualities of the child. Smith and Shephard see school readiness as:

those propositions about development and early learning that the teacher holds to be true, with what degree of credulity, with what kind and quality of evidence, in relation to what other beliefs, values, and emotional attitudes, and in the light of what consequences such beliefs have in the actions she takes.⁴¹

The study by Smith and Shephard⁴² showed a high degree of subjectivity in judgments about school readiness. These have been confirmed by Kammermeyer for the German context.⁴³

In summary, we can see that the issues concerning school readiness are largely unresolved, as openly admitted in some state plans. A document from the Baden-Württemberg Education Ministry, “*Schulanfang auf neuen Wegen*,”⁴⁴ describes the situation as follows: “The current position regarding the question of school readiness has been reached step by step, although this also includes steps backward and periods of no movement.”⁴⁵

As Meier points out,⁴⁶ the hopes of an efficient compensatory education that specifically is aimed at a homogenous school population and attempts at streaming, have not proved effective. One cannot arrive at standardized school-orientated states of school readiness. Furthermore, the discovery that age and developmental stage are not identical in children, which also means that learning ability is not age-specific, has undone most attempts to either train (through explicit formal learning) or foster (through implicit informal learning) school readiness, especially if this is based on an assessment of competencies.

As long as school readiness is used as an instrument to shape children in a particular way to suit the form of education subsequently offered in school, it runs the risk of ignoring the nature of the individual child. As Farran and Shonkoff put it:

The notion that children can be lined up at a starting gate and made roughly equivalent at a particular developmental point, after which education can begin, has little empirical support. In fact, much of the loss for children who have problems achieving in school is sustained after school entry (Entwistle and Alexander, 1990). For example, a recently published longitudinal study of more than 1,200 poor elemen-

tary students in Chicago concluded that the children gradually learned less and less each year following kindergarten until, by fourth grade, they were achieving only six months of academic growth for each year in school (Reynolds and Bezruczko, 1993). The losses these children exhibited came about after school entry, perhaps as a consequence of the school experience; they were not far behind when they entered the school environment. The dual assumptions that the child owns the problem and that the obligation of professionals is to fix him/her—often before school entry—have a particularly tenacious hold in special education (Harry, 1992b). Of perhaps greater concern, this paradigm has been generalized, so that now the numbers of students [and children in general] who are forecast to need fixing in some way or another has grown large.⁴⁷

How Does the Waldorf School Concept Relate to Readiness Theory?

Learning in a Waldorf school sense does not necessarily mean formal learning but informal acquisition of language, of manual and movement skills, of social competence, and so on. The Waldorf school view is that the child is the motor of her own development and that the educator's (and parent's) role before formal schooling is to provide a safe context, full of meaningful activities, to stimulate a child's will forces to participate in life, an approach simply summarized by the phrase "role model and imitation."

The Waldorf school approach has much in common with the ecological approach and certainly endeavors to make school ready for children. Though it is often presented as such, the link between the developmental phases of a child and a curriculum, and educational methodology is not causal but therapeutic. The Waldorf school approach does not assume a fixed schematic pattern of child development. Rather, the curriculum and approach aim to influence children by providing them with experiences that enable a harmonizing of developmental processes. The curriculum aims to provide a norm of developmental experience:

The principle of the seven-year rhythm has a salutogenetic significance when it is applied as a guideline in education. It marks a period of time

that is necessary as a kind of ideal measure designed to help children to help bring the complex web of bodily, psychological and spiritual organizations within the child to a certain stability within a given developmental phase and in which one sided and premature developments are gently held back and delayed developmental processes are expressly encouraged. Thus if the child can attune itself to this health-giving rhythm he or she gains a sustaining basis for life.

In this sense, the processes of metamorphosis that Steiner described need a healthy context in which to unfold. Just what this means in practice will have to be determined from situation to situation, which is why education is an art and not a program. The important thing is to identify which conditions foster this process and which hinder it. That means creating a universal context within which the individual can find his or her way and develop. Universal, in this sense, implies a number of qualities: open to all; permeated with a consciousness of the principles of human development; imbued with meaning; related in a real sense to real life (i.e., not isolated or artificial); seen as an entirely valid space in its own right, one that can adapt to any social context, not seen as a waiting room between two more important places. These are all basic principles of Waldorf education.

Endnotes

1. Program for International Student Assessment (PISA); a study carried out by the Organization for Economic Cooperation and Development (OECD); see *Research Bulletin*, Autumn 2005.
2. Tomasello, 2003.
3. Winston, 2002; Ridley, 2003.
4. Tomasello, 2000.
5. Krenz, 2003, p. 15
6. Rawson & Rose, 2002.
7. Rawson, 2004.
8. Carle, 2005.
9. McKeen et al., 2004.
10. Marti, 2002; Patzlaff and Saßmannshausen, 2005, p. 33.
11. Following Bründel, 2001, pp. 13–22, and others.
12. Gluckman and Hanson, 2006.
13. Mitchell, 2005; Rawson and Stöckli, 2006.

14. Fthenakis, 2005.
 15. The National Educational Goals Panel (NEGP), 1997.
 16. Huffman et al., 2000.
 17. Emig et al., 2001.
 18. Steiner, 1980.
 19. Krenz, 2003, p. 115.
 20. Steiner, 1976.
 21. Kern, 1951.
 22. Korczak, 1988, 28.
 23. Kemmler and Heckhausen, 1962, and Roth, 1969.
 24. Pawlik, 1976, p. 16.
 25. Nauck, 1992.
 26. Nickel, 1990, p. 217.
 27. Quoted in Faust-Siehl, 2001, p. 100.
 28. Ibid., p. 101.
 29. Faust-Siehl, 2001, p. 102
 30. Ibid., p. 102
 31. Graue, 1992, p. 225.
 32. de Lemos, 1999.
 33. <http://government.canada.gc.ca>, accessed 2002.
 34. Ibid.
 35. Ibid.
 36. Carlton and Winsler, 1999, p. 338.
 37. Vygotsky, 1978.
 38. Carlton and Winsler, 1999, p. 345.
 39. Spitzer, 2002.
 40. Berk and Winsler, 1995.
 41. Smith and Shephard, 1988, p. 309.
 42. Ibid.
 43. Kammermeyer, 2000.
 44. Baden-Württemberg Education Ministry, 2005.
 45. Meiers, 2005, p. 57.
 46. Ibid.
 47. Farran and Shonkoff, 1994.
- Leitfaden für Erzieherinnen, Freiburg: Herder, 2001.
- Carle, M. *Lernen in Bewegung: Das Bewegliche Klassenzimmer*, Documentation of the Freie Waldorfschule Schwäbisch Hall, 2005.
- Carlton, M. P. and Winsler, A. "School Readiness: The Need for a Paradigm Shift," in *School Psychology Review*, Vol. 28, No. 3, 1999.
- de Lemos, M. and Doig, B. "Who Am I?" in *Developmental Assessment*, Melbourne: Australian Centre for Educational Research, 1999.
- _____. "Who Am I? A Report on the Preliminary Analysis of Responses to Who Am I? By a Sample of Chinese Children in Hong Kong," Melbourne: Australian Centre Educational Research.
- Emig, C., Moore, A., Scarupa, H. J. "School Readiness: Helping Communities Get Children Ready for School and Schools Ready for Children," Washington DC: *Child Trends Research Brief*, October, 2001.
- Farran, D. C. & Shonkoff, J. P. "Developmental Disabilities and the Concept of School Readiness," in Graue, M. E., 1992, "Social Interpretations of Readiness for Kindergarten," *Early Childhood Research Quarterly*, 7, 1992.
- Faust-Siehl, G. and Speck-Hamdan, A. (eds.). *Schulanfang ohne Umwege, mehr Flexibilität im Bildungswesen*, Frankfurt am Main: Grundschulverband, 2001.
- Fthenakis, W. E. (ed). *Bildung nach PISA*, Weinheim: Beltz, 2005.
- Gluckman, P. D. and Hanson, M. A. "Evolution, Development, and Timing of Puberty," in *Trends in Endocrinology & Metabolism*, Vol. 17, 1, January; 7–12. (www.sciencedirect.com), 2006.
- Graue, M. E. "Social Interpretations of Readiness for Kindergarten," *Early Childhood Research Quarterly*, 7, 1992.
- Huffman, L. C., Mehlinger, S. L., Kerivan, A. S. "Risk Factors for Academic and Behaviour Problems at the Beginning of School," in *A Good Beginning: Sending America's Children to School with Social and Emotional Competence They Need to Succeed*, (monograph) Bethesda, MD: The Child Mental Health Foundations and Agencies Network, 2000.
- Kammermeyer, G. "Die Bedeutung des Lehrers für die Leistung- und Selbstkonzeptentwicklung im Anfangsunterricht," quoted in Faust-Siehl, 2001, p. 103, 2000.
- Kemmler, L. and Heckhausen, H. "Ist die sogenannte

References

- Baden-Württemberg Education Ministry. *Schulanfang auf neuen Wegen*, 2005.
- Berk, L. E. and Winsler, A. *Scaffolding Children's Learning: Vygotsky and Early Childhood Education*, Washington DC: National Association for the Education of Young Children, 1995.
- Bründel, H. *Wann ist ein Kind schulfähig: ein praktischer*

- Schulreife ein Reifungsproblem?" in Ingenkamp, K. (ed.) *Praktische Erfahrung mit Schulreifetests*, Munich, pp. 52–89, and Roth, H. (editor), 1969, *Begabung und Lernen*, Stuttgart: 1962.
- Kern, R. *Sitzenbleiberehend und Schulreife: Ein psychologisch-pädagogischer Beitrag zu einer inneren Reform der Grundschule*. Freiburg: 1951.
- Korczak, J. *Das Recht des Kindes auf Achtung*, Göttingen: 1988.
- Krenz, A. *Ist Mein Kind Schulfähig? Ein Orientierungsbuch*. Munich: Kösel Verlag, 2003.
- Kunesh, L. G. and Farley, J. "Collaboration: The Prerequisite for School Readiness and Success," ERIC Clearinghouse on Elementary and Early Childhood Education, <http://www.etc.su.missouri.edu>, 1997.
- Marti, T. *Gesundende Pädagogik: Die Erziehungskunst Rudolf Steiners und die moderne Gesundheitsforschung*, Bern: 2002.
- McKeen, C., Patzlaff, R. and Rawson, M. "Früheinschulung und veränderte Kindheit: Ein Zwischenbericht," in *Erziehungskunst*, No. 5, May 2004.
- Meiers, K. "Zum Problem der Schulfähigkeit: Pädagogik und Politik sind in gleicher Weise gefordert," in *Schulanfang auf neuen Wegen*, Stuttgart: Kultus Ministerium 2005.
- Mitchell, D. (ed.). "Four Phases of Research," *Research Bulletin*, Autumn 2005, Vol. XI, No. 1, Research Institute for Waldorf Education, 2005.
- National Educational Goals Panel. "Getting a Good Start in School," Washington, DC: NEGP, 1997.
- Nauck, J. (ed.). "Schuleingangsdagnostik: Theoretische Überlegungen und unterrichtliches Handeln," Vol. 6, *Braunschweiger Arbeiten zur Schulpädagogik*, 1992.
- Nickel, H. "Das Problem der Einschulung aus ökologisch-systematischer Perspektive," in *Psychologie in Erziehung und Unterricht*, 37, 1990.
- Patzlaff, R., and Saßmannshausen, W. "Bildungs-Kindheit-Gesundheit: Leitlinien der Waldorfpädagogik für die Alterstufe von 3 bis 9 Jahren," Stuttgart: Pädagogische Forschungsstelle, 2005.
- Pawlik, K. "Modell- und Praxisdimensionen psychologischer Diagnostik," in Pawlik, K. (ed.), *Diagnose der Diagnostik*, Stuttgart: 1976.
- Rawson, M. and Rose, M. *Ready to Learn: From Birth to School Readiness*, Stroud: Hawthorn Press, 2002.
- Rawson, M. "Guidelines for School Readiness," Dornach: International Curriculum Research Group of the Pedagogical Section of the High School for Spiritual Science, 2004.
- Rawson, M. and Stöckli, T. "Praxisforschung und Waldorfpädagogik: ein Reader," Stuttgart: Pädagogische Forschungsstelle, 2006.
- Ridley, M. *Nature Via Nurture: Genes, Experience, and What Makes Us Human*, London: Harper Collins, 2003.
- Smith, M. L., and Shepard, L.A. "Escalating Academic Demand in Kindergarten: Counterproductive Policies," in *The Elementary School Journal*, p. 89, 1988.
- Spitzer, M. *Lernen: Gehirnforschung und die Schule des Lebens*. Heidelberg: Spektrum Akademischer Verlag, 2002.
- Steiner, R. *Discussions with Teachers*, 14 Lectures, Stuttgart 1919, London: Rudolf Steiner Press, 1976.
- _____. *Sprachwissenschaft, in Sprechen und Sprache*, Ch. Lindenberg (ed.), Stuttgart: 1980.
- _____. *The Cultural Origins of Human Cognition*, Cambridge, MA: Harvard, 2000.
- _____. *Constructing a Language: A Usage-Based Theory of Language Acquisition*, Cambridge, MA: Harvard, 2003.
- Tracy, R. "Sprache und Sprachentwicklung: Was wird erworben?" in H.Grimm (ed.), *Enzyklopädie der Psychologie*, Vol. 3. Sprachentwicklung, Göttingen: Hogrefe, 2000.
- Vygotsky, L. S. *Mind in Society: The Development of Higher Mental Processes*, (Cole, M., et al., eds.) Cambridge, MA: Harvard, 1978.
- Winston, R. *Human Instinct: How Our Primeval Impulses Shape Us*, 2002.

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