

Re-visioning and Reintegrating Education of the Heart through Home, School and Community

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Abstract

This paper investigates the social breakdown phenomena associated with “high-achieving,” rapidly changing societies. It suggests that a rebalancing of social and academic approaches to education through reintegration of “the triple-axis of education,” i.e., home, school and community, is the key to educating world citizens who are oriented toward and capable of achieving sustainable development. Organizing research from Japan and the United States is cited. An educational model shown to reverse the social breakdown trends while improving academics, the Full-Circle Learning Program, is introduced. The program integrates character education, academic learning, arts, and unifying communication skills with service activities that strengthen the connection between home, school and community.

Introduction

The United Nations has declared the years 2005 to 2014 as the Decade for Sustainable Development in recognition of the fact that the widening gaps and imbalances caused by the unregulated social and economic activity among the world’s people are affecting the global environment in ways that are unsustainable—whether considering the natural environment in relation to resources, ecology and health, or the social environment and its cohesion. UNESCO has been appointed the “lead agency” for the agenda of this decade. UNESCO has, in turn, been discussing the agenda and goals for a “Decade of Education for Sustainable Development” (DESD). Education is recognized as the essential force needed in order to accomplish sustainable development goals. However, while the least developed countries continue to work toward goals of literacy and basic education for all, the “most developed countries,” (the US, Japan, France, England, and others) are challenged by the diminishing social returns on their scholastic investments. That is, their high academic achievements have been accompanied by various social problems that undermine the very foundations of their societies.

Education Outlook - Japan

Japan is justifiably proud of its educational accomplishments in the past half-century. The adult literacy rate in Japan has been assessed at 99% for both men and women for several decades. From the standpoint of basic educational skills such as literacy, math and science, Japan has achieved the goal of education for all. However, these achievements exist in parallel with increasingly troubling signs of social malaise. Significant incidents of bullying and violence have

been recorded in up to 55% of Japanese elementary and secondary schools. Violence in elementary schools has increased 30% in the past two years (Daily Yomiuri, October 10, 2005). Murder and suicides occur even at elementary school levels. Teachers commonly remark that students are less able to control emotions now than even a few years ago.

These signs of trouble are not limited to the large, crowded cities. Research done in Yamaguchi by Aihara, et. al. (2005) has yielded some surprising facts. Over 80% of the 5th grade and junior high school 2nd-year students surveyed said they “Always feel tired.” Although 78% of children report enjoying school at least to some extent, 20% of children say they definitely do not enjoy school. Parents have noticed a decline in motivation to study. In fact, the researchers were surprised to see that 21% of the junior high school students surveyed said they do almost no home work, while 57% reported doing a very minimal amount, less than one hour per day.

Nationwide there continue to be trends of great concern to educators and the society at large. The number of school refusers has risen to ten times more than it was in 1980. Currently 134,000 elementary and middle schools students are refusing to attend school. A new generation of adolescents is emerging : NEETS (Not in Employment, Education or Training). These are youth who have no constructive social direction, not so much as a part-time job. They wander somewhat aimlessly in the social milieu. There are currently estimated to be about 850,000 NEETs (or 2.5% of the total youth population). The numbers will likely go over one million within the next few years. (Foreign Press Center, Japan, 2005)

Of even greater concern is the number of young people (mostly young men) who simply withdraw from society altogether and become reclusive. This phenomenon, called “hikikomori” in Japanese, is one in which the disaffected and discouraged youth simply decide to live in solitude, staying in their rooms for weeks, months, or sometimes years. They may connect to society only through electronic media (TV or internet). They expect their mothers to deliver their food to the door. If disturbed, they have been known to become violent. Neither parents nor professionals have found easy solutions to this problem. It is said that there are currently 50,000 such “hikikomori” between the ages of 15 and 24. The age range is widening up into the 30’s as the phenomenon continues unchecked. Psychologists who work with the phenomena have estimated that the true number is closer to 1 million, or up to 10% of young men (Wikipedia, 2005) who have withdrawn for periods of a few months or have continued this way for years.

These and other signs are indications of an imbalanced and unsustainable education system. No matter how high the test scores, if students show a decline in social purpose, accompanied by declines in ability to establish themselves constructively in society, leading to declining marriage and birth rates, this does not bode well for the present or the future.

However, Japan is not alone in facing problems of social breakdown. Adeoye Lambo, Director-General of the World Health Organization has noted that “...the world is experiencing a ‘social breakdown syndrome’ reflected in a rising incidence of psycho-somatic diseases, mental disorders, anxiety and neurosis, prostitution, crimes and political corruption, and a variety of sexual diseases including AIDS.” He suggests, “Education must extend its influence from intellectual training, which is its center, to a refinement of sensibility - to the cultivation of understanding, imagination, sympathy and tolerance, and to the fostering of talent of the kind of individuality that operates harmlessly and beneficially within the framework of a free society.” (Lambo, 2000, quoted in Mustakova-Possardt, 2003, pp. 10-11)

Professor Zhang Liangcai of Qufu Teacher's College (Aihara, 2005) commented on the similarities of the social issues arising in Japan, Korea and China as three societies that have been facing changes brought about in the wake of rapid economic growth. He pointed out that in the "triple axis of school education, social education and child rearing, each has its own function that is original (unique). The main function of child rearing (in the home) is to guide the child in order to ensure that they grow up to become the right kind of people as adults." (Aihara, p. 154) He posits that in the current situation, the intellectual training function of school education has been forced on to home and child rearing in terms of morality, the development of the child's own talents and interests and socialization has been short-changed. Other Chinese educational researchers including Wang Zhihe, (2004) comments that the modern test-oriented education system is harmful to both body and soul. While lamenting the physical and mental damage done to serious students through overly long hours of study, he questions the real value of the quality of education that results. "It seriously devoices (sic) school from life, book from practice." (p. 1-200) He calls for a postmodern education that is more organic, looks more at life than at textbooks, considers beauty as well as intellect, and values new or alternative thought patterns in searching for interrelationships among the increasingly complex aspects of life.

The role of the community must also be reconsidered. The educational function of the community has all but completely been turned over to market forces and consumerism. Many children identify their heroes as cartoon characters while a high percentage of them cannot name a single other adult besides their parents in their own neighborhoods. (Higgins, 2000, Aihara, 2005) In fact, the Aihara study reports that the vast majority of parents who were surveyed in Japan, Korea and China say they want more involvement of the community in the social development of their children. Between 65-95% of parents in all three of these societies said they would like more chances for their children to interact with adults, more opportunities to help in the community, more neighborhood-based guidance systems, and a more common awareness and approach to discipline of children by people in the neighborhood.

The Need for a Wider Framework for Education Systems

The UNESCO Decade of Education for Sustainable Development echoes this call for widening the conceptual frameworks of education to include consideration of formal, informal and non-formal conduits of education through home, school and society. UNESCO has further identified four pillars of education that must be addressed in better balance : Learning to know (gaining accurate knowledge of the reality of our circumstances and recognition of our challenges); Learning to live together (creating constructive partnerships and working relationships for collective responsibility); Learning to do (acting with determination to build more sustainable systems); Learning to be (becoming more firmly rooted in the fundamental principle of the dignity of life for all of the world's people.)

To its credit, Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT) has also been reflecting seriously on these issues. They, too, have come to recognize that the problem does not lie in the arena of formal education alone, but in the balance of educational experiences provided in the total environment affecting children - the home, the school and the community at large. Their viewpoint is clearly expressed in the report, "Progress on Education

Reform” (MEXT, 2005) “...excessive egalitarianism and cramming of immoderate levels of knowledge” has led to “a notable fall in education functions in home and society” and neglect of the personal and social needs of the students. Their own research shows that the children who have had a greater the variety of “daily life experiences” (such as playing with younger children, using knives to peel fruits and vegetables, etc.) or “nature oriented activities” (catching insects such as dragonflies or grasshoppers, fishing or digging for clams, etc.) show the greatest sense of morality and justice (as demonstrated in such actions as inclination to stop a friend from doing something wrong, or giving up a seat on the train to an elderly person).

The Ministry of Education has set seven priority strategies aimed at promoting education that goes beyond the narrow focus on academic proficiency. The second strategy on their list expresses the intention to “Foster open and warm-hearted Japanese through participation in community and various programs.” Three sub-strategies are listed : (1) Encourage participation in community service and various programs including reading programs ; (2) Improve moral education...and allocation of moral education teachers ; (3) Take actions for the revitalization of education in home and community. Other strategies include improving the learning environment of schools, paying better attention to the mental health of children, protecting children from harmful influences, taking appropriate action if trouble is caused, and involving more community adults in positive ways. These also address the issue of the importance of recognizing the full scope of a child’s educational environment and the relationship to the community. The Education Ministry hopes to create schools that are trusted by parents and communities by providing more transparent evaluation and communication systems between school, home and community, as well as to improve both the pre-service and in-service training of teachers. (MEXT, 2005) However, the actual methods, models and “muscle” to implement these strategies is still very tentative and much is left to the creativity and motivation of local administrators.

Organizing Research from the United States

It is notable that the importance of the family and community in the education of children has come to be highlighted in the bodies of research coming out of the United States as well. A consortium of researchers from across a wide variety of disciplines, including neuro-scientists, biochemists, pediatricians, psychologists, sociologists and so on, were brought together on the “Council for Children at Risk.” (YMCA, 2003) They studied all of the factors related to the socialization of children and the causes of social breakdown. In their report, “Hardwired to Connect : A New Scientific Case for Authoritative Communities,” the Council for Children at Risk pointed out that “in the midst of unprecedented material affluence, large and growing numbers of US children are failing to flourish.” As evidence, they cite statistics including the fact that 21% of 9-to-17 year-old American youth have diagnosable mental or addictive disorders. Twenty-five percent of American adolescents are considered at risk of not achieving a productive adulthood. The cause, they conclude, is “lack of connectedness to other people and to moral and spiritual meaning.” The neuro-science research shows that the human brain is “hardwired to connect.” That is, children are born with a biological propensity to learn primarily through their human relationships, and to seek meaning, not just form. Without an adequate amount of time spent in interaction with caring people in their surroundings, the brain function of children and

young people actually changes, leading to more aggressive or withdrawn behavior. In order to become healthy, productive people, children need well-balanced, multi-generational, positive and nurturing social relationships. In the current social milieu children are simply not getting enough human interaction, nor are they getting enough of the type of stimulation that engages the aspects of the brain that respond to exploration of deeper meaning and connections.

The qualities needed in communities in order to create an optimum balance for child-rearing have been identified by the Council for Children at Risk, and communities that have these qualities have been dubbed by them as “Authoritative Communities,”

- Multi-generational communities including children and youth.
- Treat children as ends in themselves (appreciated at each stage).
- Warm and nurturing.
- Establish clear guidelines and expectations.
- Have a long-term focus.
- Core work done by non-specialists.
- Encourage spiritual and religious development.
- Reflect and transmit a shared understanding of what it means to be a good person.
- Reflect orientation to equal dignity of all people and to the principle of love of neighbor.

An equally impressive and important body of work comes from the Search Institute who has identified forty developmental assets related to positive socialization outcomes for children based on social science research. Twenty are “external assets” listed under four headings: **support** (such as family support, positive communications, other adult relationships, caring neighborhood and caring school atmosphere, as well as parent involvement in schooling); **empowerment** (living within a community that values children, ensures their safety and offers children opportunities to be of help); **boundaries and expectations** (family, school and neighborhood boundaries and rules that are clear and consistent; adult role models and peer influences that reinforce a sense of high expectations); and **constructive use of time** (participation in creative activities and programs designed especially for children, participation in religious programs, and constructive use of time at home). There are also twenty “internal assets,” qualities and attitudes that the child brings to his or her own development, that are listed under the following headings: **commitment to learning** (the child is motivated, tries to do well in school, engages actively in learning, usually does homework on time, cares about teachers and other adults at school and reads for pleasure); **positive values** (the child is told by parents and other adults about the importance of caring for others, to speak up for equal rights, to have integrity, honesty, responsibility, as well as a healthy life style); **social competencies** (the child makes decisions well, makes friends, is comfortable with people of different backgrounds and cultures, can resist trouble, and solve conflicts without violence); and **positive identity** (the child feels that he or she has a positive influence, is purposeful and has a positive view of his or her own future).

In extensive research using these assets as a basis for assessment, it was found quite clearly that the more assets that are present for a child, the higher his chances of success in school, the more leadership skills were displayed, the more responsible the child was for his or her own health and other positive attributes. Conversely, the lower the number of assets, the more likely students were to be involved in risk-taking behaviors such as problem alcohol use, drug involvement and sexual behavior.

Promotion of positive attitudes and behaviors

Number of Assets Present	0-10	11-20	21-30	30-40
Leadership skills :	50%	65%	77%	85%
Health Maintenance :	26%	47%	69%	89%
Valuing Diversity :	36%	57%	74%	88%
Success in School :	8%	17%	30%	47%

Better school performance :

Number of Assets Present	0-10	11-20	21-30	30-40
GPA	2.1	2.7	3.0	3.2

(Scales, 2005)

Protection from high-risk behaviors :

Number of Assets Present	0-10	11-20	21-30	30-40
Problem Alcohol Use :	49%	27%	11%	3%
Involved in Violence :	61%	38%	19%	7%
Illicit Drug Use	39%	18%	6%	1%
Sexual Activity	32%	21%	11%	3%

(Search Institute, <http://www.search-institute.org/>)

In a major survey involving 217,000 youth from sixth grade through high school across 33 states in the USA it was discovered that American youth have an average of a little less than half of these assets. Among the external assets that fewer than one third of the population have assessed as available are “positive family communications” (30%), “caring school climate” (29%), “community values youth” (25%), “youth are seen as resources for the community” (28%), “adult role models” (30%), and “creative activities” (20%). More than two thirds of students were assessed as lacking two key internal assets: “reading for pleasure” as an element of **commitment to learning** and the **social competency** of “planning and decision making.” (Search Institute, Percent of 6th to 12th Grade Youth Experiencing Each Asset)

Such information can be helpful for families, schools and communities to enable them to recognize the gaps that are in need of effective action in order to provide better nurturing environments for the socialization of youth. The Search Institute has put this knowledge to work to improve conditions in many communities by recommending strategy areas in which to create positive action. They include: **Engaging adults** from all age-groups and all occupation groups to build sustained, strength-building relations with youth; **Mobilize young people** to use their power as “asset builders” and agents of their own change; **Activate sectors** of society such as schools, homes, social and religious groups, businesses and so on to contribute more directly to the development and empowerment of children and youth; **Invigorate programs** for children and

youth so that there is a more “asset-rich” environment that is easier for all young people to access; **Influence civic decisions** “by influencing decision makers and opinion leaders to leverage financial, media, and policy resources in support of this positive transformation of communities and society.” Using surveys based on the assets list, tracking the overall results of such efforts can help any community to ensure that their activities are achieving results in the desired direction.

Full-Circle Learning Approach

An idea whose time has come often appears and emerges in several places at once. As educational researchers in various countries have pondered and investigated carefully the above conditions, other concerned educators set to work developing model programs that set out to incorporate and implement the information gained from the cutting edges of 20th century educational research. One program, which has achieved and documented outstanding results for more than a decade, is the Full-Circle Learning Program. It was started in Los Angeles, California, after the civil unrest in 1992 as an after-school program aimed at engaging children in an enriching education program that would help to heal the community. This program can be used to illustrate the efficacy of the broad type of educational approach that is being called for in the global, the national and the local communities. It is intrinsically “asset-building.” Due to its flexibility, the program has been shown to be effective both as a community-based and a school-based approach in a variety of countries and educational settings.

“Full-Circle Learning” trains teachers or educational facilitators to develop a series of learning cycles, or units, which start with a focus on character development, then to tie the children’s academic learning to the higher purposes of service to the community (whether at the local to the global level). Each learning unit combines an enriching program of arts, teaches unifying communication skills, and culminates in service projects in which children can practice their skills while becoming a vital part of helping to sustain and to improve their social surroundings. The values and virtues, and social competencies gained have been shown to develop much higher motivation to learn and they become the energizers for higher academic as well as social success. Children, rather than seeing themselves as mere “consumers” of education or community assets, or “victims” of society’s deficits, develop their “altruistic” identity and are empowered to become the helpers and healers of their generation.

A teacher might begin by consulting with students about their own hopes and dreams. What kind of people do they admire? What kind of people do they hope to become? From this initial discussion the teacher may learn that certain people in the community are of interest to children; perhaps doctors, veterinarians, artists, farmers, grocers, policemen or educators. The teacher would then discuss the role of these people and ask the students to identify what “habits of heart” enable that kind of person to serve the community. A healer or health worker, for example, must have compassion or empathy, must communicate well, must be knowledgeable and knowledge-seeking, and must be patient. Compassion, communication, knowledge, and patience may become the themes for the unit developed and students will study and define these qualities, observe these qualities and notice them in their own and each other’s interactions at school and home. They may take account of these qualities of heart whether they are present or absent in the people they

learn about in their language or social studies lessons. They may call in a doctor or other health worker and discuss with them how the habits-of-heart are developed, as well as what other academic skills, arts or communication skills they may have learned in school are put to work in their daily work and service to the community. Habits-of-heart homework may be sent home that inform the parents of the character aspects the children are focusing on and give suggestions as to how the parents might notice and encourage those qualities in their children. Children are also encouraged to notice the qualities that are shown by their parents and other adults in their surroundings.

The teacher(s) then create plans that incorporate the academic skills being learned by the children to some service-oriented outcome related to the themes. They may develop a project generally 2 to 8 weeks in length, through a combination of learning opportunities available in the community related to the expressed interests of the children. For example, for a health-related unit, children learned from community health workers how community surveys and community health education help to improve the health and enable people to avoid illness and injury. The students then were taught the math skills needed to make a community survey. They worked together to develop and carry out a health-related survey. They also developed vocabulary and reading skills, art skills and communication skills that empowered them to make a series of "poster presentations" at a community health fair on nutrition and other health topics. The opportunity to put what they had learned to immediate use in order to provide health education to their community excited the children and the learning became very meaningful to them.

Teachers are trained to broaden the scope of the children's learning while integrating the standard academic skills for each grade year into interesting cooperative learning experiences for the children. Cooperative learning approaches have the advantage of lowering "performance anxiety" related to competitive testing and allow more students to gain higher scores even in standardized tests. Cooperative learning also increases students' social competencies and powers of empathy as they learn.

One key to the program is the direct teaching of communication skills that help children to identify and resolve problems and to work together with others smoothly. The Conflict Resolution Bridge (CRB) activity described in Higgins (2004) is a very useful tool not only to help students solve problems in the classroom and on the playground, but also to consider the range of examples of issues they meet in their language, social studies and history lessons. In addition to conflict resolution skills, the students are also introduced to meditative techniques that help them to visualize and integrate their internal thoughts and feelings. They are further instructed in consultative methods which allow them to plan and make decisions together and to evaluate the results of their activities. They gain ability to speak out on public issues and to speak convincingly to adults who can carry out needed improvements that children are able to identify through their studies. A number of projects have been carried out cross-culturally and internationally. Often two or more "Full-Circle Learning" sites will work collaboratively and challenge each other to further research.

Evaluation of the results shows that in the first year of the program 75% or more of the students increase beyond expected grade levels in reading, math and spelling. Parent reports express that 100% of the students "increased their motivation to learn." Teachers, parents and other adults notice the students' increase in responsibility taking, empathy, leadership skills and

ability to interact positively with the world around them. As the program is carried on, children stretch their learning skills even further. Evaluation data show 57% of participants improved their standardized academic scores on reading, math and spelling from 2 to 5 grade levels within the second year of the program. In addition, understanding of global or cultural issues, music and artistic capacities, and their ability to resolve conflicts without violence are demonstrably improved.

Some examples of the comments of parents whose children have participated in the program show the range of improvements noticed in the students' abilities and skills. "There are many more questions being asked. He now has good reasoning skills. He can analyze his behavior." "My children can now speak confidently about...issues." "My child gets along better with everyone...considers others' points of view." "My child is beginning to have more focus on the work that will be useful in his future learning." "My child is now more confident, compassionate, understanding, tremendous total growth." (Langness, 2005)

The Full-Circle Learning model has spread from after-school programs to full-school programs, summer camps, and even parents involved in home-schooling. With a bit of training, teachers are able to integrate the elements of student academic goals into enriching experiences, relevant and engaging learning projects. These projects may be local, or may extend their outreach around the globe to connect with students in other countries. The excitement of students about what they are learning infects the home and family with a new focus and better communication skills. The projects that reach out to the community introduce students to the "real world" in such a way that they feel valued as participants. In this way, the skills they learn in school lead to a sustainable commitment to learning for the sake of becoming helpers, healers and humanitarians of a society and a future they are helping to create.

Conclusion

High-achieving, rapidly changing societies have been puzzled by the social-breakdown phenomena that have accompanied their academic achievements. Research has converged to identify the problem as an imbalance in the educational roles of home school and society. Assessment tools have been created that are able to identify specific strengths and weaknesses in the social and learning environments as well as the students' own inner environments that are essential to optimum development. Educational models such as "Full-Circle Learning" show that asset-building educational approaches that strengthen the learning environments and balance the character development, academic development, arts and communication skills as well as social involvement of students can turn the problem of social-breakdown around and provide holistic and fulfilling education systems for a sustainable global future.

References :

Aihara, T. (Ed.) (2005) *An International Comparison of the Socialization of Children in Today's Rapidly Changing Society, with a focus on surveys conducted on parents and children in Japan, China and Korea.* Yamaguchi, Japan : Yamaguchi Prefectural University.

Daily Yomiuri (2005/10/01) Education ministry warrants an 'F' for effort.

[http : //www.yomiuri.co.jp/dy/national/20051001TDY04004.htm](http://www.yomiuri.co.jp/dy/national/20051001TDY04004.htm)

Foreign Press Center Japan (2005), Japan Brief : 850,000 Young People with No Inclination for Work, [http : //www.fpcj.jp/e/mres/japanbrief/jb_520.html](http://www.fpcj.jp/e/mres/japanbrief/jb_520.html)

Higgins, M.S. (2004) Education for peace : successful multi-cultural programs from around the world may hold keys for peace education in Japanese schools." *Bulletin of the Faculty of International Studies*, Yamaguchi Prefectural University (No. 10), pp. 11-19.

Higgins, M.S. (2000) Comparing Elements of Moral Education in Japan and China, *Bulletin of the Faculty of International Studies*, Yamaguchi Prefectural University, 2000.

Higgins, M.L. & Johnson, J., (1999). International Educational Initiatives, Inc. Spiritually-based Global Curriculum Guide. I.E.I., Inc., Juneau, Alaska. [http : //www.iei-world.com](http://www.iei-world.com)

Japan Ministry of Education, Science, Culture and Technology (MEXT) (2005), Progress on Education Reform : [http : //www.mext.go.jp/english/statist/04120801/002.pdf](http://www.mext.go.jp/english/statist/04120801/002.pdf)

Langness, Teresa (2005) *Leaders of the Future*, Children's Enrichment Program/Full-Circle Learning Annual Report 2003-2004. Topanga, CA : Full-Circle Learning.

Langness, Teresa (2003) *Making Peace, A full-circle learning conflict resolution supplement*, Los Angeles, CA : Children's Enrichment Program, 2003.

Mustakova-Possardt, E. (2003) *Critical Consciousness, A Study of Morality in Global, Historical Context*, London : Praeger.

Scales, P.C. & Roehlkepartain, E.C. (2003) Boosting student achievement : New research on the power of developmental assets. *Search Institute Insights and Evidence 1* (1) available for free downloading at [http : //www.search-institute.org/research/insights](http://www.search-institute.org/research/insights).

Search Institute (2005) Percentages of 6th- to 12th-Grade Youth Experiencing Each Asset, [http : //www.search-institute.org/research/assets/assetfreqs.html](http://www.search-institute.org/research/assets/assetfreqs.html)

Wikipedia (2005) Hikikomori, [http : //en.wikipedia.org/wiki/Hikikomori](http://en.wikipedia.org/wiki/Hikikomori)

YMCA of the USA (2003) *Summary of the Commission on Children at Risk's Report : "Hardwired to Connect, the new scientific case for authoritative communities.* (YMCA of the USA, Dartmouth Medical School, Institute for American Values.)

Wang, Z. (2004) An antidote to Modern Test-oriented Education : Toward a Constructive Postmodern Education, *Proceedings of CGIE's 2004 International Forum on Integrated Education*

Re-visioning and Reintegrating Education of the Heart through Home, School and Community
and Educational Reform, Santa Cruz, California Oct. 28-31, 2004.

Zhang, L. (2005) Parents and Children in China-Traditions and Realities in Child Rearing. In Aihara, T. (Ed.), *An International Comparison of the Socialization of Children in Today's Rapidly Changing Society, with a focus on surveys conducted on parents and children in Japan, China and Korea*. Yamaguchi, Japan : Yamaguchi Prefectural University.