**REPORT ON THE PRESIDENTIAL WORKSHOP AND PANEL SESSION ON
DESIGNING FOR HUMAN LEARNING IN THE ANTHROPOCENE**
**held on October 17 and 19, 2016, in Las Vegas, NV, in the context of the Annual Convention of the
Association for Educational Communications and Technology (AECT)**

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Introduction

On the Web site of the Learning Development Institute (see http://www.learndev.org/HLA.html) the Institute's
program on 'Human Learning in the Anthropocene' is described in the following terms:

> Human Learning in the Anthropocene (HLA) is a new focus area of exploration, research,
> reflection and development in the Learning Development Institute. It comes in the wake of the
> Institute's prior major focus on Building the Scientific Mind (BtSM). HLA is not unrelated to
> BtSM, but it represents a wider and more acute focus.
>
> The rationale behind HLA is complex. A growing body of scientific research suggests that it is
> time for humanity to stop doing business as usual. We are becoming painfully aware that there
> is something terribly wrong in the relationship between humans and their planetary
> environment. Nobel Laureate Paul Crutzen thus named our geological epoch Anthropocene. He
> did so for a reason, considering that we live in an era predominantly characterized by the
> significant, at times disastrous, impact of human activity on the environment. A cornucopia of
> serious problems is the result. Our cultural development has not kept pace with the astounding
> increase in what we know and are technically able to do. Consequently, humanity is in for a
> fundamental adjustment of its way of being in the world.
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> The problems we have to deal with in the Anthropocene are wicked and complex. They call for a
> different kind of human inhabitants of planet earth, i.e., culturally transformed members of our
> species who are able to think differently and take control of their behavior at a higher level of
> responsibility. Such cultural transformation calls for a different vision of what it means to learn
> and how we design for learning. While dealing with these issues we find ourselves still largely in
> terra incognita. Given this reality, HLA's attention goes in the first place to charting the terrain,
> to identifying and clarifying the major problems ahead and challenges to be met, and to figuring
> out what must be done. In this context, the HLA initiative aims at contributing to (1) a change in
> perceptions of human learning in ways that are relevant to the challenges of the Anthropocene
> and (2) a change in attitudes and competencies in those involved in creating the conditions for
> learning in both informal and formal settings along the lifespan around the world. The focus of
> HLA is on knowing, as well as on doing, what must be done in the Anthropocene.

According to the same Web page, the following two activities have so far taken place under the HLA program:

1) Presentation of a paper on '*Human Learning and the Development of Mind in the Anthropocene:
   Reflections against the Backdrop of Big History*' at the Third Biennial Conference of the International Big
   History Association, held from July 14 to 17, 2016 in Amsterdam, The Netherlands.
2) Participation in a Round Table on '*Bildung and Developmental Psychology*' held on September 6, 2016, in
   Berlin, Germany.

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[1] Final editing by Jan Visser

The Presidential Workshop and Panel Session on '*Designing for Human Learning in the Anthropocene*' (DesignHLA), covered in this report, is thus the third event in this initial series of activities under the HLA program.

Who were involved?

Jan Visser (Learning Development Institute) proposed, organized and chaired the event.

The following eminent individuals were invited and joined Jan for the workshop and panel session:
- **Lene Rachel Andersen** (Next Scandinavia);[2]
- **Elizabeth Boling** (Indiana University);
- **Ron Burnett** (Emily Carr University of Art and Design);[3]
- **Carlo Fabricatore** (University of Huddersfield);
- **Brad Hokanson** (University of Minnesota) ;
- **Alfonso Montuori** (California Institute of Integral Studies);[4]
- **Jonathan Michael Spector** (University of North Texas);[5]
- **Yusra Laila Visser** (Illinois State University).
- **Lya Visser** (Learning Development Institute) served as videographer and rapporteur for the meeting.

Brief biograpgical information and statements of interest for all of the above can be found at http://www.learndev.org/AECT2016-DesignHLA.html#anchor2084283.

These specifically invited individuals were in turn joined by a few dozen attendees of the AECT convention who were present at the panel session, a number of whom took actively part in the discussion.

What happened?

The process underlying the structure of the event consisted of two parts.

1. On Day 1 of the AECT convention a six-hour workshop took place with the individuals mentioned in the previous section as participants. It was furthermore attended by AECT Executive Director Phillip Harris, who assisted also with the audio recording of the session, and Joan Harris. The workshop served a dual purpose. It was in the first place an opportunity for creating mutual understanding and social cohesion among representatives of different disciplines and interests regarding the need for serious reflection on the state of human learning in the world now that anthropogenic impact on the environment has become a crucial concern. In the second place the workshop served as a preparation for the panel session two days later.

2. On Day 3 of the convention the workshop was followed by a two-hour panel session, open to the attendees of the AECT Convention at large. The purpose of this session was to widen the debate and to involve a larger professional community in a process of reflection on and reimagining of learning and education in the context of the Anthropocene.

This report covers both the workshop and the panel session.

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[2] Lene Rachel Andersen participated in the workshop via Skype from Stockholm, Sweden. She contributed to the panel session by way of a video recorded interview.

[3] In the end, Ron Burnett, who contributed to the preparation of the event, had to cancel his participation at the last moment.

[4] Alfonso Montuori was an active contributor to the discussions during the workshop but was unable to be physically present at the panel session, to which he contributed by way of a video recorded interview.

[5] Michael Spector arrived late for the workshop in which he could not participate. He was a full participant in the panel session.

Learning in the Anthropocene

The discussion revealed that the theme '*Designing for Human Learning in the Anthropocene*' can be viewed from different perspectives. Thus, it can for instance be looked upon against the backdrop of the complex array of changes one foresees as the ideal end point of a desired transformative process. Alternatively, questions can be raised regarding that transformative process itself. Moreover, one may choose as a starting point for reflection the current practice of design for learning and critique it on the basis of its lack of adequacy in view of the changes we see taking place in our current world. It is the diversity of such vantage points that made this discussion particularly interesting and relevant.

The first main concern that was brought up concerned (higher) education, which is seen as overly disconnected from the real world and often failing to deal with complex, wicked, problems. It is compartmentalized, while the real world is neither compartmentalized nor specialized. Higher education may thus have less relevance for learning in the Anthropocene than it could have. Secondly, the power of complex informal learning is not sufficiently recognized. Throughout their life, people spend only a small proportion of their waking hours in formal learning systems. Many things—often the things that are most crucial to them—are learned irrespective of the existing formal learning opportunities. It was suggested that games naturally attend to these two concerns—there's no gaming without learning. Games, if adequately designed, mirror very well the complex wicked problems we encounter in society. Games like Minecraft, for instance, contribute to dealing with, and learning about, social processes which are important in the Anthropocene. Games can also be a useful practical tool in the classroom. It is well known that instructors often have limited possibilities to introduce topics not directly related to the curriculum. Given this limitation, it is important to realize that games can be excellent vehicles to discuss the 'messy' problems we face nowadays. It is important to reflect on what can be learned from game design and game designers, and how we can transfer that learning to formal education.

The importance of situating the issue of education in the larger context of the Anthropocene compels us to redirect our attention away from design as an instrument for merely fixing specific problems. Instead, the focus should be on overriding approaches to facilitating learning. We should accept the challenge to go back to the roots of education, to a contextualization of education, and to take into serious consideration what people should be able to do in the ever more complex real world, now and in the future.

We have to think of a different situation, an inter-connected world, a planetary context. This has implications for education in, for instance, how we teach history. History is more complex and richer than what we give it credit for. It is richer as well than what most curricula prescribe. Knowing our history may influence how we look at diversity. Diversity should be seen as a source for a wealth of creativity and value. It will help us to reframe who we are, where we come from, where we are now, and where we want to be in the future. It may bring people together and help us no longer to see complex issues as a threat but as a way to embrace learning about and with each other.

Another important consideration about human learning in the Anthropocene concerns the need to pay attention to the development of resilience. This important concept is currently mostly lacking in education. We generally still stick to the basic definitions of learning that focus on a more or less stable change in behavior

rather than on the continual process of construction of new knowledge that allows us to interact meaningfully with a changing environment.

Resilience can be personal and systemic. The two modalities have in common that they both look at adversity. Personal resilience means that one has to adapt to a new reality, having to choose between seeing oneself as a victim or as someone who has agency, being able to develop new habits of mind and grow as a person while learning from failures and challenges. Systemic resilience means returning to a stable state following adversity (return to the 'normal'). Resilience is fundamental to learning and to growth. Other areas that are important to design for learning and are often under researched and therefore given insufficient attention in the design practice are intrinsic motivation and perseverance.

Awareness that we humans are part of the planet is called for and it looks like we don't have this sufficiently in mind. People seem to be defending their belief rather than questioning assumptions or considering alternatives. We should focus more on inquiry learning. This last observation brings us to another focus area of this session: the current design practice.

A look at the current practice of design for learning

The role of the instructor

The principal focus in the design community is stiil on design for instruction rather than on design for learning. A topic that is often brought up in this context is the role of the instructor/teacher/facilitator in the delivery of learning materials and other prompts to learning. How well are the latter prepared to make effective use of technology and prepared to engage students in talk about change. The attitude of the instructors about students is often quite negative, as exemplified, for instance, by frequently heard complaints that they do not read the materials, fail to prepare well, and are uninformed and lazy. We should ask ourselves whose fault this is. Blaming is not a solution. A childhood memory shared by one of the panelists may make it clear what one should look for. He recalled that as a child he asked his father (a rabbi) what a teacher was. The answer his father gave was that, among other things, a teacher is a voice that listens, a hand that guides, and a face that does not turn away. Not too many teachers fit that description. Different attitudinal dispositions should be developed towards students showing interest in why they study, what they expect and want to learn and why.

It should be clear, also, that the world of human learning extends vastly beyond the instructional environments in which one learns. Design for learning should thus take into account as well the conditions for learning available in the wider context of which the instructional environments are part.

What is design?

What do we mean when we use the word design? Design should spring from rationality. As it was argued, if you take the opposite of rationality you will get irrationality, not in the technical sense of the word but in the common sense and that means craziness. Not grounding ourselves in rationality means that we are left with nothing to ground ourselves in.

The design practice as we know it co-evolved with the world we have, the world in which we live, which offered a habitat that was relatively stable until well into the twentieth century. Our current design practice reflects that world and sustains its conditions. By the same token it impedes change. In times of dramatic change, such as we are experiencing in the Anthropocene, we must therefore reconsider our options and adopt a different mindset. We must ask ourselves if we really want to continue to be designing for a world that no longer exists and, if we no longer want to design for the 'current' world then the question becomes how we can design our way out of this world, in a wider perspective than hitherto perceived.

On a global scale we continue to face important problems in designing for learning for all, such as the extreme inequality of educational experience in formal as well as in informal education. Such inequality exists both within and across nations. We often do not have a clear understanding of values and theories. Critically understanding design is an important object of study, or at least it should be.

Part of the preliminary workshop concentrated on one of the basic tenets of instructional design: effectiveness and efficiency. These pillars of instructional design leave little time for students to get their ideas really developed. The shortest way possible is for many people certainly not the best way. We often see that instructional designers have learned the tricks of the trade, but the question is if they also are designers for learning. Designing for learning is seen by the workshop participants as creating a learning space in which people are comfortable and happy to work on their development.

Design thinking is an area in its own right that is poorly represented in the instructional design tradition. Design thinking is a mindset focused on acting creatively in complex situations so as to generate solutions for a better future rather than a rule-based procedural framework to solve specific problems.

Creativity, critical thinking and coping with failure as elements of design for learning

The role of creativity and critical thinking as well as education of and for learning was also brought up. It may be important to focus more on non-cognitive traits that may have a broader impact on our educational actions – a choice system of disciplines could be preferable, with a basic set of skills and preparedness for lifelong learning, focusing on curiosity and creativity. Currently higher order skills are examined through capabilities of retention of information. Complex problems and questions should be a part of the design process so that solutions can be found by finding out more about the problems. The problem with the current instructional design tradition is that it is not a very creative act and a concern was raised that many designers are, due to lack of time or maybe interest, not always creative. They are skilled and have a tendency to seek solutions to specific goals. Another type of design may be in order.

It was furthermore considered that failure should be reflected on as an opportunity for learning. Faiure should not be treated in the design context as if it were a waste product. Students must have the opportunity to fail and learn from failure. Failure is not a 'disaster.' Instead, it is an opportunity for learning. Learning from mistakes seems to be something that has no place in our current design for learning. Instructional designers have a tendency to spoon-feed the students through often extreme cases of rubrics, leaving little room for a student to be creative and critical.

A look into the future

As a matter of course for the theme in question, the future was given special attention in both the workshop and during the panel session. Deliberations around this issue were particularly inspired by the remote contributions from Stockholm, Sweden, to both the workshop dialogue and the panel session. It was emphasized that future oriented design should keep the diversity of audiences in mind. No single design fits all. Further issues brought to the table included, among others, the ones highlighted below.

- We live in a period of important transitions, presenting both opportunities and uncertainty. Major dimensions of these transitions have to do with (1) dramatic and rapid technological change; (2) massive migratory movements that are perceived to impinge on existing cultural heritage; and (3) the ever more evident anthropogenic impact on the environment. As a consequence there is an acute need for dialogue, with a focus on culture and heritage. Social and personal developments mirror each other.
- For many people, the world as we know it is falling apart. Technological change, in combination with changes in the social fabric due to migration, make people feel insecure, as they sense that the world is no longer what they grew up in. It leads to hostility towards any influence from outside the things one is familiar with. To make people feel at home again in a changed world conversations are needed that focus on culture, art, and education.
- The challenge of the Anthropocene is particularly acute and prominent. Human presence on earth changes the surface of the planet. We have tremendous power not only over nature but also over ourselves as we are increasingly able to manipulate the human organism. This raises the existential question of who we want to be as a species.[6]
- Large scale and profound transitions are not new to human societies in national and sometimes also regional contexts. Mass migratory movements in ancient human history in the middle-eastern Fertile Crescent brought about both strife and opportunities. That wasn't the first time, and it wasn't the last time either. We are a migratory species. Those who currently oppose migration may themselves—or their children may—well become migrants when evolving conditions of the Anthropocene force them to move out of the places where they are now. More recent examples, of a different kind, are the transition the United States went through as a consequence of the civil rights movement and South Africa's transition from a country ruled by an ethnic minority to a modern democratic state for people of multiple ethnicities. In all such cases of transition our capacity to collectively engage in transformative learning plays a crucial role. The example of the Highlander Folk School in the context of the above mentioned transition in the United States received specific mention. The Highlander Research and Education Center (http://highlandercenter.org), as it is now called, has more than a century of experience in training. New at the time the school was established was that learners, often coming from lower middle class families, had a say in what they learned, which meant that they were connected to their own learning, and that teachers saw themselves also as learners.
- Understanding of the world is important. In the western world, we are accustomed to perceiving our role as a controlling one, but we cannot, and must not, control evolution on a global scale as we are ourselves part of it. Learning to live in harmony with the world around us is therefore important.

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[6] It is noted that almosty the same question was raised 15 years ago by Jim C. Spohrer in a paper presented on the occasion of one of the conversations organized and facilitated by LDI in the context of AECT on the Meaning of Learning (MOL). Said Spohrer: "It is not surprising that at this time of rapid change we choose to ask the question 'What is the meaning of learning? By the middle of this century we may well be asking 'What is the meaning of being human?' as our grandchildren develop the capabilities to create new intelligent species of biological, digital, and hybrid life-forms." Jim's paper is available at http://www.learndev.org/dl/DenverSpohrer.PDF.

- We have to arrive at a global economy that is good for everyone. It's a huge challenge but one of the ways to realize this is through bringing in these issues in the classroom and making them part of our conversations.

Leading questions

It was unanimously decided by the workshop participants that the following set of questions, which had informed the workshop debate, should also serve to inspire the plenary discussion during the panel session.

1. What do we actually mean when we use the word **design**? (What is the nature of design thinking and what is needed to foment true design thinking [not the kind of design thinking that characterizes much of what instructional designers habitually do]?)
2. Can (and should) we think of **human learning** as something that concerns more than the mere acquisition of skills (attending, for instance, also to attitudinal development and reflection on values and ethical issues)?
3. What about **habits of thinking and dispositions of the mind**, such as the passionate desire to understand (science) and create (art)?
4. Should we stick to the mantra of the original instructional design tradition that our focus should always be on **reaching learning goals effectively and efficiently along the shortest route possible, avoiding any redundancy in the instructional process**? What are the hidden assumptions regarding human existence and human development that lie behind this notion? Do we see a mismatch between the kind of humanity we need for life in the Anthropocene and what actually results from current design practice?
5. Let us not forget that our **research tradition** builds on and feeds back into design practice we may no longer feel comfortable with. Should it change? If so, how?
6. Should we continue to think of **technology as "design for instrumental action"** (Rogers' words)? Is it really just about instruments?

Plenary discussion during the panel session

The discussion started off with a question about the role of curriculum. One of the participants remarked that up to now we have only talked about *how* you teach, but not about *what* you teach. Curriculum is mainly responsible for education in our society. How can we improve it so that we can teach the next generation to be different? Is a designed curriculum a necessity? Can we be more flexible? Can curriculum be a vehicle for change?

The discussion developed further mentioning that we have to know the 21st century skills that are important and then not only the core disciplines/skills like biology and chemistry but also cognitive skills, critical and creative thinking, so that people are better prepared and can succeed in the world of the future. We should transcend the separation of disciplines and focus more on the holistic nature of knowledge, concentrating less on the *breadth* of knowledge and more on the *depth* of reflection. Creativity and boldness are needed to support the change that is needed. One of the panelists questioned how much you can change teaching without changing the curriculum, and answering his own question he thought that teachers are less constrained than they think, also because students can be an important vehicle for change. How you define learning can define practice and

the same holds true for the curriculum. An example of this is seen in Salt Lake City at the Open Classroom School (http://ocslc.org/), where students, teachers and parents together form a learning community.

There is a need to involve students in the curriculum and get their input into what should receive attention so as to make the program more useful and responsive to evolving interests as well as to ensure that expectations are being met. A good decade ago Syracuse University (a private university) asked input from students on the curriculum and to what extent it had been useful. That was an important learning exercise for the program, designers and instructors. Unfortunately it would be much more difficult to carry out such an exercise at a public university. A similar type of exercise was carried out in a military training context, which resulted in a corrective feedback loop in developing the training materials.

Some shifts should take place in the discourse on education and learning. Attention should shift from 'competencies' to 'habits of minds' and from 'instruction' to 'learning'. Leaving more input to the creativity of students should be rewarded and failure should be more often seen as an opportunity for learning. It was interesting to hear that at the University of London complex cases related to current economy problems were set for new first-year business students. Although it was very difficult if not impossible to be successful in solving the problems or even to suggest creative possible solutions, it resulted in an increase of the students' desire to learn.[7]

Discussion about how including the opportunity to experience failure could be accommodated in existing instructional settings revealed that, although more divergent thinking and situated learning are recognized as being important, there are also the practical problems of the challenge to instructors who have to spend more time on grading assignments and the need for an even more rigorous design of rubrics.

One of the questions suggested for discussion related to the fact that our research tradition builds on and feeds back into design practices we may no longer feel comfortable with; should it change and if so, how? Though no specific answers to the 'how' question came forward, it was recognized that the question as such was an important one that needed to be addressed. Reductionist modes of research were seen as often inadequate to address questions of interest, such as those that seek insight into such complex matters as how habits of mind develop and how we know. It is a concern in this context that doctoral research is rarely driven by passionate engagement with questions but rather motivated by the desire to obtain a degree.

Instructional designers often take their discipline for granted. Design thinking, the state of mind that underlies our actions as designers, is rarely discussed and not normally taught. Design should not be seen as a deliberate action to 'mold' or change students.

The importance and challenges of transdisciplinary approaches in research, learning and teaching were briefly discussed. Transdisciplinary research involves dialogue among the disciplines and negotiation with different disciplinary departments. It requires students to work together to discover the various dimensions of usually wicked problems. It requires of faculty and students a disposition to look beyond the boundaries of their respective specializations and to look at problems from a level that transcends that of the disciplines involved.

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[7] It is noted that similar beneficial effects are reported to result from exposing beginning medical students to real cases at schools where medical training follows the principles of Problem Based Learning (PBL).

Such research is currently done by doctoral students at a small but growing number of universities around the world.[8]

The lively discussion on this and other important issues had to be brought to an abrupt end when colleagues for the next session entered the room and made us aware that the allocated time for the session had already been surpassed. More discussion is necessary and desired. Opportunities will be offered in the near future to continue the discussions. The chair thanked the AECT and the participants for a fruitful being together.

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[8] See for instance, Muhar, A., Visser, J., & Van Breda, J. (2013). Experiences from establishing structured inter- and transdisciplinary doctoral programs in sustainability: A comparison of two cases in South Africa and Austria. *Journal of Cleaner Production,* 61, 122-129.