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CONNECTING HOME, SATISFACTION AND WEALTH THROUGH SUSTAINABILITY

Preparatory Steps to Developing a Self-Efficacy and Flow-inspired Learning Design

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Olivier Pessot
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PREFACE

I would like to thank my teachers at Oulu University for their extended support during my research and my fellow students for our shared time together. I got lifelong inspiration from getting to meet wonderful Finns and truly phenomenal Finland, a country demonstrating how education, and democracy in education, concretely impact daily life. I am grateful to Finland and EU for allowing me to get further excellent education at minimal cost. A big Thank You to my interviewees: our exchanges transformed me. A special thank you to my dearest Caroline Pearsall, Reader Extraordinaire, my family and friends and the EcoRegard Associates for their point of view from Sustainable Transformation.

ABSTRACT

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For the vast majority of households, the household building itself, be it an apartment dwelling or family house, represents a large majority of an individual's identity, life work, community, savings, and wealth, as defined by the sum of all their assets. Of course, such an important purchase also means much more than just the monetary value.

This paper aims to explore the concerns, experiences, and best educational (Dewey, Lonka) and related behavioral theories (Bandura, Csikszentmihalyi) to pave the way for the question of how to design a Self-Efficacy-informed and Flow-inspired learning experience design on house acquisition to increase wealth and sustainability based on current economics (Raworth, Fullerton) and sustainability research (Dixson - Declève et al.) Concepts surrounding place and the importance of the relationships which connect us (Buchanan) were considered, as well as how we can uncover and integrate values leading to more satisfying lives and more sustainable behaviors.

The Research Method was via 16 qualitative interviews, 10 of which were conducted in France, with questions stemming from concepts and theories from the literature review. A thematic analysis in 6 steps as defined by the inductive and deductive approach method of Braun and Clarke was used on the 10 French interviews. Then, in order to integrate values, attitudes and beliefs leading to action and set the stage for the design to follow, Saldana's value coding was used for another analysis of the same10 French interviews.

The findings resulted in a practical example on how to start the design of a Self-Efficacy, and Flow inspired Educational Program on sustainable houses. They also revealed that we need more research on what role housing will play in the future of more sustainable economies and communities, how houses also represent a system of values and relationships incorporating financial and non-financial wealth, defining and valuing satisfaction and sustainability, and that more educational programs are needed to help people make better and more informed choices.

Keywords: Doughnut Economics, Education for Sustainable Development, ESD, Flow, Home, House, Place, Regenerative Capitalism, Self-Efficacy, Sustainable, Value, Wealth.

CONTENT

1 INTRODUCTION

For the vast majority, the household building itself, be it an apartment dwelling or family house, represents a large majority of an individual's identity, life work, community, savings, and wealth, as defined by the sum of all of their assets. Of course, it also means much more than just the monetary value of that important purchase. This paper aims to explore the concerns, experiences, and best educational theories to pave the way for my question of how to design a Self-Efficacy-informed and Flow-inspired learning experience design on house acquisition to increase wealth and sustainability.

A house, an apartment, a home. Ever since society has existed, owning a place to live has allowed people to safely rest and recharge, secure their families and store their most precious belongings. Homes can give social status as a building construction can reflect clever engineering, even ingenuity, and become a statement of thriftiness or extravagance, individuality or conformity. Often it is the place where education and life friendships begin. Homes embody a focal point for social connections which are the roots of well- being (Helliwell, 2004). Beyond providing shelter, homes can cover many more functions from providing for fundamental needs with the example of the Victory Gardens or Cuban gardens, which showed added resilience from ecological farming as compared to Florida crops after undergoing the violence of hurricanes - still very relevant today (Music, 2021; Endres 2009) or to complete more modern needs, such as becoming a producer of energy for oneself or society.

Acquiring a household means preserving one’s financial wealth, but also aiming to increase it and avoiding suffering a loss due to one’s lack of knowledge when it comes to the real estate market, building principles or the related environmental and social variables, of which the recent energy crisis is just an example. Yet no practical training exists which allows one to take all the important parameters into account. Feeling unable to tackle or rightfully prepare for this complex challenge often means overwhelmed buyers stop at the purchase price and mortgage costs, maybe adding a few personal variables gathered here and there, short of thinking more broadly about their investment. This skewed focus actually often means failure at preserving wealth which understandably harms inexperienced or simply unaware buyers, even after a lifetime of moving around. The purpose of this

paper is not to give more power to the rentier economy[1] but to the 90%+ world population to acquire, maintain and use one's household. It is intended to the "citizen investor" (Dasgupta, 2021, pp.3-4).[2]

Considering wealth from larger perspectives - financial, social, and environmental - this paper intends to support the learning of how to buy one's house or apartment viewed through a choice of frameworks and thereby contribute to empowering a much more significant percentage of the population. Due to the advent of the climate and energy crisis, I believe good practices around real estate investments for families will become essential going forward.

Additionally, with the onset of climate change and unpredictable weather, being able to analyze whether the home you have is well-positioned from both geographical and social/community viewpoints will become increasingly important, so as not to experience the devastation of losing one's home in a flood or fire, which obviously decreases wealth too.

This paper is a first step in designing a sustainability-based educational program around housing and personal wealth. It aims to discover both where the interviewees are now, from both a homeowner and learner perspective, and what concerns, values, and obstacles appear. Additionally, it aims to gather concerns sustainability education should tackle, how educational philosophies and psychology can inform research, and how to incorporate the learner experience within that, which will lead to further research after this paper, starting with the creation of my educational program.

[1] "The rentier economy is about charging for access to resources, limiting competition, and, in short, extracting value more than creating it. It then funnels such economic rents (unearned surplus) to the benefit of what economist Michael Hudson calls the FIRE sector: finance, insurance, and real estate. This activity is not a bug in the current system, it is a predictable structural outcome of the rentier capitalism gameboard." (Dixson-Declève, 2022 p.153)

[2] "My reader is the concerned citizen. She is someone who has watched television documentaries on the state of the biosphere and has read reports in newspapers and magazines on the extent to which Earth is being degraded and biodiversity is being lost. What she wants now is an explanation for how and why we have come to this pass, and she wants to know how to translate that explanation into recommendation. She is curious to know what sustainable development should mean; […] the economics of biodiversity becomes a study in portfolio management. Which is why I call her the "citizen investor'. (Dasgupta, 2021, p.3-4)

2 BACKGROUND/CONTEXT

After studying and following an internship in sustainable cities, owning a company in sustainable housing for several years, and then working as a sustainable business consultant and real estate agent for three years, I felt the general public is simply not well-informed enough about the benefits of sustainable housing even in general, and that their focus is mainly, only, financial. My desire to teach people how to buy more successfully and how to integrate their daily lives into more sustainable approaches, including community, values, and wealth as larger than just monetary, is mainly what has inspired this research paper.

I also feel that this subject, sustainable homebuying, should be more deeply integrated with Education for Sustainable Development (ESD) and that more practical applications can be made between these two fields. Currently ESD concerns are related more to the physical design and use of sustainable materials than a person's philosophical approach and connection to values, beliefs, needs, and desires for financial security.

After examining the United Nations 2030 Agenda for Sustainable Development I concluded that my research fits into Aim 4: *Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all,* Aim 11: *Make cities and human settlements inclusive, safe, resilient and sustainable*. And Aim 12: *Responsible Consumption and Production.*

Following this, I explored the UNESCO publication of Education for Sustainable Development (2020) to see what references they might have for housing. I believe my research falls under this category in education, in particular the idea that ESD helps to "empower people to transform themselves and transform societies" (2020, p.8). These ideas are not developed in this paper but could be in future research, specifically on the specific goals 4, 11 and 12 from Appendix 1.

Additionally, a major issue surrounding communication on environmental concerns is that of negative overwhelm. In order to not create counter-productive sustainability-oriented education, we must beware of delivering hard truths about sustainability issues without simultaneously providing alternative solutions, or, "as argued by Schugurensky (2002, p.62), in the absence of a supportive social environment or a social reality that is susceptible of transformation or a sense of community, "critical reflection alone is not only unlikely to lead to transformative social action, but in some cases

it may even lead to the opposite situation, which is cynicism, paralysis, and a general feeling of helplessness" (Schugurensky, 2002, p.6). This is of particular concern to me as in the face of the issues we are dealing with now, we cannot afford such inaction nor mindset.

2.1 Why Homeownership and Place Matter

A Home, and learning about homes, correlates with the famous educator John Dewey's "situation" of factoring in a learner's objective experience with the learner's internal condition (Dewey, 1938, p.42) as homes can be the representation of your inner self, a refuge from the outer world, and a second skin to protect you and your loved ones. It is affected by and connected to its outside environment, whatever the nature (urban, rural, etc.). It is, especially in 2023, even more, a place where most of the personal and professional experiences of life unfold. Presented as such, it is the physical link between the learner and the world around them. And although expectations may be limited, learning about its impact is manifold and enriching.

Additionally, Buchanan (2019) demonstrated that only by updating our understanding of the ethics of place by including systems thinking, can we start to see how to use traditional ethics in ways that are more holistic and fitting with our cosmopolitan and mobile lifestyles. Home and place automatically imply being part of a community and web of interconnected relationships, which as we shall see, are essential to human happiness and resilience.

Lastly, being led by consumerism for the last 75 years, individuals from our planet's richest countries seem to be at a loss due to a lack of knowledge, or forced by time or budget restrictions, to choose affordable and easily available, instead of transformable and sustainable at a seemingly slightly higher financial cost. However, by choosing the latter, their homes may well increase in financial worth and definitely have a chance for positive anticipation, present, and long-term satisfaction. Regarding the homes themselves, owners' choices are shaped by margin-oriented standardized material and services which often only reflect the desire to conform to, or reflect the consumer society's definition of success, as opposed to other satisfactions from cultures where value is also given to the respect of our nurturing Planet and human well- being.

2.2 The Role of Education, Flow, and Self-Efficacy

Dewey wrote that the utmost freedom should have value, particularly "freedom of intelligence" meaning the "freedom of observation and of judgment exercised in behalf of purposes that are intrinsically worthwhile." (Dewey, 1938, p.61). Dewey also writes that "Plato once defined a slave as the person who executes the purposes of another and […] is also a slave who is enslaved to his own blind desires" (Dewey, 1938, p.67). With this I believe he is emphasizing the need for creative and critical thinking about one's own life and that thinking sustainability encourages that in a way that current capitalism/consumerism doesn't.

Flow, within a learning framework, has been made accessible and popular by Csikszentmihalyi in 1990. It actually was based on his research since he came with his very first book on the subject, *Beyond Boredom and Anxiety*, in 1975. His 1990 book is still a very current reference and the reference for this paper. It is part of educational psychology. It focuses more on the overall experience and how the enjoyment can be motivating and take us outside of everyday life. I believe it has huge potential within sustainable education, and it provides various solutions to learning difficulties, or reluctance. It also taps into notions of the ecstatic which promotes continued involvement and improvement.

I agree, as Anne K. Armstrong et al. (2018) remarked, that "Educators should prioritize programs that inspire hope and help build participant's confidence in their capacity to be part of feasible (climate) solutions" (2018, p.54), or solutions for any major social and environmental issue, of course. Her book discusses education and brings up many of the problems people currently face emotionally and cognitively in the face of climate change. The behavioral psychologist, Bandera (1977), thought Self-Efficacy was key to coping with stress or other negative emotions in the face of obstacles, thus reinforcing positive learning experiences and developing human growth. Indeed, I see Self-Efficacy as one of the strongest keys for fixing our current environmental and economic problems, and that it can act as a counter-agent. This is why Self-Efficacy has been chosen as the primary focus of behavior change in this paper, and this work aims to develop a framework for starting the sustainable house ownership learner journey.

2.3 Why We Should Build Wealth Sustainably

After the recent economic crash of 2008, then 2020 and Covid, the current cost of living crisis, unaffordable housing prices and rents, and climate change impacts, it has become essential for the general population to gain a better hold of how to build long term wealth, where their house is an investment and not a drain on finances. To be able to do this people need to be properly aware of all the possible risks involved and have guideline criteria on what will be important going forward into an increasingly unstable economic and environmental future. Governments no longer seem interested in supporting their populations, especially in times of need, and as about 70% (Financial Samurai, 2023) (Appendix 4) of people's wealth is tied up in their house, it is of utmost importance that they will be able to protect and grow this investment. There are too many stories today of floods, fire and unsuitable cladding, loss of house insurance due to climate change, and other such disasters.

2.4 Current State of Homeownership Education

There is currently almost no published academic research on homeownership or personal wealth from an Education for Sustainable Development perspective, and so this paper aims to contribute towards that gap and therefore proposes an original viewpoint on house acquisition within this framework. My third and fourth research questions deal with the idea that houses can be made in ways where there is always potential for improvement such as the ability to switch to renewable energy or to add insulation.

My research questions are:

RQ1 What roles have Flow and Self-Efficacy played in my interviewees' educational experiences?

RQ2 What do people find important about a house? And how can we position sustainable house acquisition within ESD?

RQ3 How does one keep, or increase the value of a house?

RQ4 How can I encourage sustainable housing Self-Efficacy in my design?

3 LITERATURE REVIEW

After an extensive search in various university libraries, Google Scholar, and the internet, I realized there is virtually no academic research that focuses on my topic, which is House Acquisition *from a holistic point of view*. I have therefore chosen important articles and books from the various areas of research that I feel are important for my focus.

I have chosen four main areas of research: Education for Sustainable Development, Education and Self-Efficacy, Economics, and Place, which are broken down into smaller areas of concern. I will not be dealing directly with the materials used for building houses in this paper, so my environmental perspective is from an educational and societal one.

3.1 Education for Sustainable Development (ESD)

I have chosen three specific texts for this paper. The first deals with some of the obstacles inherent within teaching people about climate change and sustainability and the behavioral change that will need to take place to create a new society. The second looks at similar concerns but also delineates in more detailed ways steps that can be taken, whilst the third looks at in what ways education can influence sustainable choices.

3.1.1 Climate Change and Behavioral Change

The book of *Communicating Climate Change* by Armstrong et al. (2018) explores education on climate change from the perspective of "environmental psychology and climate change communication research" (p.4) as they have identified several issues within these frameworks that prevent people from taking action in spite of all the available information and knowledge we now have on the subject. They provide a process of evaluation and a "program development cycle" (2018, p.4) of five steps, originally taken from Jacobson (2009, pp.50- 51) which I will be adapting for my next stage of research after this paper (Figure 1, below)

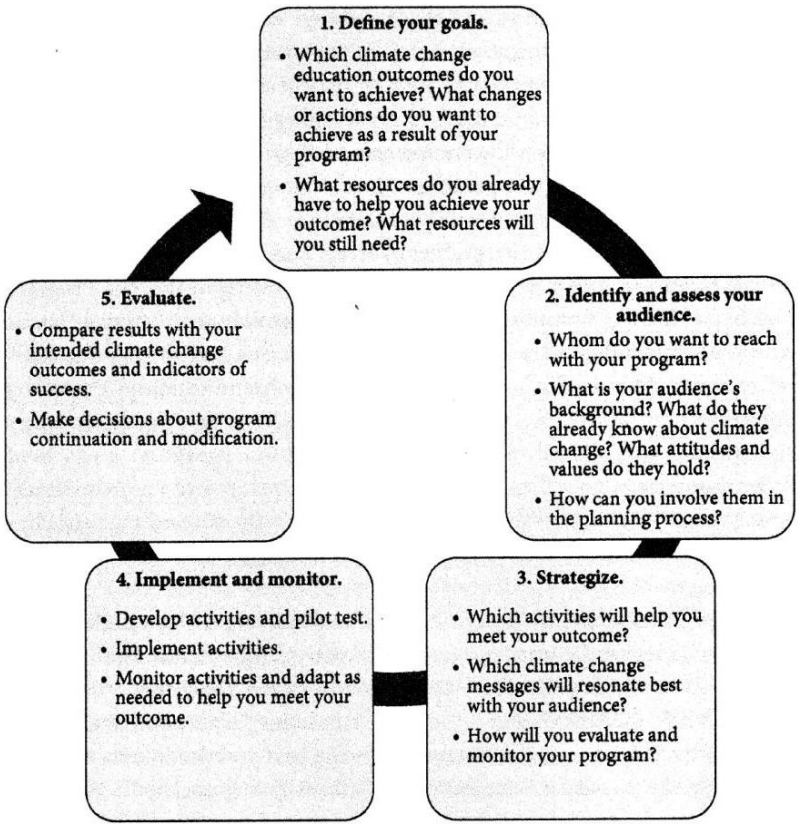


Figure 1 Program Development Cycle (Armstrong et al. 2018, p.4)

They ask how training programs can help develop "climate literacy" (2018, p.2) and encourage people to take action. Their research shows that making it "personally relevant and meaningful" and by using "inquiry and constructivist learning" are two key factors (2018, p.2). A third really important aspect is the concept of "framing and metaphors" and how these can change perspectives (2018, p.2). Everyone approaches environmental concerns with their own "different experiences, mental and cultural models, and underlying values and worldviews" (2018, p.3).

They mention the household as an area of concern in relation to the use of electricity, which accounted for 29% of emissions in the US at the time of writing, with 33% of that used by homes and companies (Armstrong et al., 2018). They cite transportation as the next largest emitter at 27% of all emissions. Both statistics show how living close to work and reducing electricity consumption can have a positive impact.

An important issue is that Armstrong et al. noticed that being aware does not imply acting on it, "Attitudes are very hard to change" (2018, p.27) and "are often a weaker predictor of behavior than we

might expect" (2018, p.21). They suggest some reasons for this may be due to "lack of knowledge, structural barriers such as cost" (2018, p.21) or even how others may see them. It seems that the social environment one lives in has a strong impact on whether any beliefs actually lead to action. The authors suggest that educators change the focus of their educational outcomes according to this, meaning those in places already concerned can focus on "collective efficacy": "like trust collective-efficacy is a stepping stone to collective action" (Armstrong, 2018, p.29). Whereas outcomes in places where people are unconcerned can work more on "knowledge and awareness" and "identify areas of common ground "within the community (2018, p.24). Additionally, some successful outcomes of such education frequently include "individual outcomes like climate literacy, attitudes, Self-Efficacy and behavior change; community outcomes like collective efficacy, social capital, and collective action" (2018, p.25). Saldana's Value Coding (2021, p.110-115) (Appendix 6) allowed me to explore attitudes and behavior: after a first pass to get familiar with the data, sentences or words were gathered every time they expressed values - meaning importance attributed to a subject-, attitudes - the way one think or feels about something-, and finally beliefs - or systems of values and attitudes leading to action.

Armstrong et al. suggest exploring the "building blocks for attitudes" which they see as including "values, beliefs and emotions, even though much research shows "attitudes are very hard to change" (2018, p.27). However, they believe successful communication can counter this problem. They point out that the media mostly generates fear surrounding climate change, which is incredibly ineffective and that instead inspiring hope would be far more productive. They also suggest Self-Efficacy is an "empowerment variable" and "results in people expending more effort in the face of obstacles like climate change" (2018, p.28).

Concerning the previously mentioned obstacles people have towards action, the authors identify two major "dragons of inaction", which are explained by the psychological theories of "terror management and cognitive dissonance" (Armstrong et al., 2018, p.41). They see identity as having a key role in these and that in some cases the educator will need to deal with identities that can't absorb or accept the climate realities, as they would be too alienating from their communities' "norms, or expectations" and established identities (2018, p.45). Indeed, "when identity protective cognition is activated, people avoid beliefs that might alienate them from their chosen group as a means of protecting their sense of self" (2018, p.45) as per Table 1 hereafter. Identity protective cognition could be activated to be consistent with one's political party.

TABLE 5.1 Theories about how people assess climate change information

THEORY	EXPLANATION
Science comprehension thesis	Conclusions drawn based on information. Climate change information leads to climate change action.
Motivated reasoning	Conclusions drawn based on what you *want* the conclusions to be. Motivated by previous knowledge, values, and beliefs.
Identity protective cognition	A type of motivated reasoning. Conclusions drawn based on what you want the conclusions to be so as to be consistent with your peers and your social group.

Table 1: Theories about how people assess climate change information (Armstrong et al., 2018, p.45).

The researchers suggest finding "areas of common ground" to deal with such individuals (2018, p.48).

Another issue is that of "psychological distance" (2018, p.49) where people do not feel personally affected by the environmental problems. In this instance, the educator needs to find ways to connect the local to the global and not focus on the future of populations the participant will never meet. Compassion can greatly help reduce any psychological distance but is not always easy to induce. Finding ways of combining these elements which best suit the participants is important for greater success.

Terror management, mentioned previously as an obstacle, is a theory in which humans focus all their lives on surviving yet must support the "persistent realization that we will eventually die" (2018, p.52), so we have developed "psychological defenses" (2018, p.53) in order not to be paralyzed by this state of affairs. Armstrong et al. suggest climate change triggers these defense systems which creates a certain level of denial and false sense of security that it will never happen to them. This obviously also weakens any move towards action. They remark that the purchase of SUVs has increased as these vehicles represent "safety, stability, and success" (2018, p.53).

The other dragon was cognitive dissonance. This theory is also about how people deny or refuse to connect with positive climate actions or behavior. People with this "attempt to reduce negative feelings that accompany inconsistent attitudes and behaviors by… denying that any conflict exists" (2018, p.53). The authors remark that in our current society some amount of "inner dissonance" has to be supported but educators can help learners consider "feasible climate solutions" that fit with their lifestyles (2018, p.54), rather than complete denial.

Armstrong et al. consider framing to be very important and that they can "make different ideas more noticeable or important" which can "affect how audiences assess information" (2018, p.59). They take two categories of frames from Communications research; "equivalency frames and emphasis frames" (2018, p.59). Emphasis frames use particular words to "appeal" to certain areas of "knowledge or interest" (such as location, quantity etc.) while equivalency frames draw attention to particular "aspects of a story" which can affect whether people see something positively or negatively (eg. consensus or contention) (2018, p.60).

These authors argue that the way a message is presented, or how we tell the story, must align with the viewer's values (Note: this is even felt when rephrasing the questions during the interviews or even their timing) (Armstrong, 2018, p.66). Indeed, the authors believe "Self-Efficacy is a foundation for environmental action because it contributes to a sense of self-worth and resolve necessary to set and reach challenging goals" (2018, p.64). Added to this is the need for hope, as hope can be framed with particular goals plus "pathway" and "agency thinking", which represent the steps to take and people's collective ability to do it. (2018, p.65). Additionally, including values can help audiences decide "whether information is relevant to them" and the authors cite three types of values: "altruistic…biospheric …and egoistic" (2018, p.66). Building a program which promotes "hope and Self-Efficacy also enhances the likelihood audiences will act" (2018, p.69).

3.1.2 Balance with Nature, Balance with our Values

In the foreword of the book *Earth for All* by Dixson - Decléve et al. (2022), Christina Figueres emphasizes how our current economic system rewards "competition instead of cooperation […] environmental destruction instead of balance with nature […] short-terms gains instead of long-term peace" and how we have chronically neglected "our inner world and what human beings hold most dear" (Dixson - Decléve et al. 2022, p.xviii). Figueres believes that "large-scale systems change" (2022, p.xviii) starts with each person choosing to act in ways that bring about change. Certainly, as an educator, I hope this to be true and this book is founded on research carried out by scientists, economists and other experts essentially exploring how our personal actions and participation could bring about the transformations we need and how we need to value "our collective future" (2022, p.2). Their theoretical framework was systems thinking. They speak of five main areas, which they call "turnarounds", and took as their tools of analysis, the Transformational Economics Commission and

a “system dynamics model” (Dixson - Decléve et al. 2022, p.3). These tools allowed them to explore different possible futures, according to whether inequality widens, or if the population dramatically increases, and so on. They also used the Social Tension Index and Average Well-being Index. Three of their five turnarounds are directly related to Homes:

- Turnaround 2. Addressing gross inequality: Homes are clearly majorly related to wealth. The largest part of our living expenses, or more than a fourth of the average income is spent on housing and house expenses[3] and so it has the greatest impact on the allocation of available income.
- Turnaround 3. Empowering women: learning to acquire a sustainable home means learning to manage assets sometimes worth 70 % or more of total assets as in the United States (Financial Samuraï, 2023). Women acquiring this knowledge would get direct power from it. One contribution from this will be to propose basics on sustainable home acquisition to all, hence to women.
- Turnaround 5. Transitioning to clean energy: learning how to choose, renovate or build homes in a sustainable way has important impact on transitioning to clean energy and, even before that on reducing the very need for energy in a home, which currently represents 40% of the energy consumption and 36 % of the CO2 produced. (Kurmayer, 2023)

In Chapter 4, “The Inequality Turnaround” suggests “more progressive taxation on both income and wealth for individuals and corporations” (Dixson- Declève, 2022, p.75). More knowledge on the importance of Homes in the income and wealth of individuals should underline how Homes, for many people, are one of their basic needs, and therefore should be taxed less, as opposed to the wealth and income of the richest, which is mostly unrelated to their basic needs, and thus should be more highly taxed, because the richest have a surplus of wealth and income.

In Chapter 8, the new fair distribution of wealth from the global commons to all citizens, proposes testing different kinds of taxation based on environmental or social impact. Concretely, it could start

[3]The average U.S. household spends $22,623 per year, or $1,885 per month, on all things related to housing. Shelter accounts for $1,105 of our monthly budget. That includes rent or mortgage payments, mortgage interest, property taxes, maintenance, repairs and insurance. The remaining $803 each month covers utilities, household operations, supplies, furniture and equipment. These are figures for 2021 from https://www.bls.gov/opub/reports/consumer-expenditures/2021/home.htm seen on July 15, 2023

with empowering citizens with the ability to make good choices on what constitutes most of their wealth (homes, clearly: see Financial Samuraï, 2023). As Chapter 8 proposes a true revolution of the kind, it is hard not to include a political note here. As a counter example, France, for example, is turning energy issues and the housing shortage into a pretext for additional tax revenues from individual residences added rental revenues: 72% more, to be exact. The base from that taxation would increase while the richest families, owning only a portion of their assets in personal housing, are taxed less and less (Appendix 5). These additional taxes on small yet welcomed housing revenues for the 90% least wealthy, housing being a small portion of the top 10% wealthiest assets, is obfuscated under unclear tax schemes or the litany of already obvious social housing needs rhetoric on housing needs and the energy efficiency transformations of homes which already endures an explosion in the price of materials and services. *Earth for All* sees opportunities to change from a taxation system to one based on "a complete reorganization of the foundation of the economic system" […], to " create economic optimism, investment opportunities, and jobs in all sectors", to be "managed fairly", where "everyone is granted a stake" […] "to avert the risk of economic collapse" (Dixson- Declève, 2022, p.146-147). This would mean a democratic system where responsibilities and benefits are fairly distributed.

3.1.3 Wealth, Education and Behavior

Meyer's book *Does education increase pro-environmental behavior?* (2015) discusses wealth, education and behavior. He was interested in finding out whether higher levels of education can increase more sustainable behaviors. He found that there is a causal effect of obtaining a higher level of education on pro-environmental behavior, even evidence that education "may make individuals more aware of the external effects of their behavior and more concerned with social welfare" (Meyer, 2015, p.108). He is one of the first to try to measure this, by using an "instrumental variables identification strategy" (2015, p.108) which took "changes in compulsory schooling laws" throughout Europe as the variable (2015, p.116), a variable which has successfully been used in the past already. He felt understanding more about this "causal relationship" would be highly useful in public policy and could help us imagine what might happen "in an alternative world where individuals gain higher levels of education" (2015, p.108). He found that seven "pro-environmental behaviors" were positively affected which were: "Using environmentally friendly travel, reducing disposables, separating waste for recycling, reducing energy consumption, purchasing environmentally labeled products, purchasing local items and reducing car usage" (2015, p.109). However, interestingly, he also discovered that

numerous studies carried out on the benefits of education focused mainly on the economic rewards of increased earnings. In his discussion of results, he wonders whether those who have higher levels of education are in fact simply more aware of finance and savings (saving energy, reducing water consumption etc.) and therefore choose behaviors which will save them money, due to them being better "economic optimizers and pro-environmental behavior is one place where this will manifest" (2015, p.115).

Meyer observes that little research is currently available on how education may affect "behavior outside the marketplace" (2015, p.116) and his research aims to contribute one new goal of more sustainable behavior. He also questions whether education triggers other effects for which we are currently unaware and have no systems of measurement, such as "patience" (2015, p; 116) or environmentally interested acquaintances from their extra years of studies in more international communities. Additionally, he wonders "what types of interventions outside of the traditional education system might also be more effective in increasing the extent of pro-environmental behavior in society at large" (2015, p.116).

3.2 Education, Self-Efficacy and Flow

3.2.1 Education and experience

In his book, *Education and Experience* (1938), John Dewey, one of America's most famous educational psychologists of the 19th and 20th century philosophies, is against the then and still (!) current state of traditional education and its top-down direction, and he is in favor of the newly developed more democratic "progressive schools" that appeared in the USA. He pointed out that one of the flaws of traditional education was that it was "fixed" into books and then handed down under the assumption that the future would be the same as the past, which he finds incredibly misguided as he believes change in human society "is the rule, not the exception" (1938, p.19). His position instead was to view "actual experience and education" (1938, p.20) as being connected and that the student's vision of the world necessarily had to be included. Therefore, teachers needed to ask themselves what value life experience should/could have in the classroom. He didn't believe "all authority should be rejected" (1938, p.21) but that a balance needed to be found between the two, teacher and student. He asks us how "acquaintance with the past may be translated into a potent instrumentality for dealing

effectively with the future" (1938, p.23) and this completely resonates today as populations need to be suitably educated on sustainable housing.

Dewey observed that although experience can be helpful and informative, some experiences are "mis-educative" (1938, p.25) and may produce trains of thought that are destructive, callous or simply misinformed. He felt many students had become bored and experienced a sense of powerlessness, which impacted their future actions and commitments. He underlined that "everything depends on the quality of the experience" (1938, p.27) and especially an experience which "arouses curiosity, strengthens initiative, and sets desires and purposes that are sufficiently intense to carry a person over dead places in the future"(1938, p.38). Dewey described the importance in education of the "interaction" between the external factors presented and the internal factors of the learners, and that all the added experiences masterfully linked together, creating a "continuum" (1938, p.38) in the learner's minds, improved the learning experience. For this reason, he saw a democratic approach as the only way to create such positive learning environments due to its inclusion of "mutual consultation" (1938, p.34). This notion of external and internal factors and their interaction is totally valid when it comes to thinking on sustainable house purchase education.

3.2.2 Self-efficacy and education

In a similar way to Bandura (1977) Dewey believes "every experience affects for better or worse, the attitudes which help decide the quality of further experiences, by setting up certain preference and aversion and making it easier or harder to act for this or that end" (1938, p.37) which is his way of saying a sense of Self-Efficacy results from a positive and supportive environment and the opposite sense leads to aversion and lack of growth. He defined growth as physical, intellectual and moral (1938, p.36), which is interesting as homes are so much linked to an individual's values as Buchanan (2019) explored in the ethics of place. Dewey calls this collection of experiences the "principle of continuity" of experience (1938, p; 37) and he considers the role of the educator "to see in what direction an experience is heading" (1938, p.38). An additional point is that including the student's experiences automatically means not having a fixed inflexible curriculum, and that different experiences and socio-economic situations must be taken into account. Thus, having a clear idea of what type of learning environment promotes intellectual growth becomes even more important. He felt a great weakness of traditional education was to ignore entirely what was going on inside the

students' minds and lives. A consequence of dismissing this aspect of a learner's education was to realize that there is no "educational value in the abstract" (1938, p.46). On this point, sustainability education can gain from linking learners' life experiences to values derived from sustainable thinking. Another issue is that when something is "learned in isolation" it is therefore segregated and remains "disconnected" to the experiences and conditions of real life (1938, p.48). Dewey was convinced that "the most important attitude that can be formed is that of desire to go on learning (1938, p.48) and that educational experiences need "worthwhile meaning" (1938, p.49). He adds that "the educator more than the member of any other profession is concerned to have a long look ahead" and he suggests their motto should be "connectedness in growth" (1938, p.75). Interestingly, he comments that when "general insecurity, emotional and intellectual as well as economic, is rife" the desire to "lean on fixed authority is active" but he believes "it is folly to seek salvation in this direction" (1938, p.86). The sometimes authoritative measures which did not bring added value solutions during the Covid pandemic heightened the importance of using education as a vehicle for change, inspired by Dewey's "philosophy of experience" (1938, p.91). On this point, owning the education is crucial for a true and long-lasting transformation. This where Self-Efficacy is an interesting concept.

Self-Efficacy is important because capacity for change includes a positive judgment of ability. Furthermore, dealing with sustainability issues as complex as climate change, there will be failures and disappointments and people will need to get back up and continue to become the Model Citizens we need. They will need resilience and know how to stay self-motivated.

Self-Efficacy could be anticipated as a personal and intrapersonal component of the competences from UNESCO"s "*Learning to Be*", linking knowledge and behavior. In the Discoveries Chapter, around psychology, it was noted that pedagogy was about organizing reality into action and thought, not merely copying it. (Faure E., 1972, p.110). This resonated with Dewey's education approach and links with more education psychology to follow here.

Albert Bandura was an American educational psychologist who worked at Stanford University and developed social cognitive theory. One of his key texts was published in 1977 entitled *Self-Efficacy: toward a unifying theory of behavioral change.* This text forms the basis for Self-Efficacy education and theory today and inspired another key text, *Flow*, by Csikszentmihalyi, in 1990; a work used here

for further research. Bandura's paper focused largely on managing phobias and "how behavior is acquired and regulated" (1977, p.192) and research on studies carried out which noted that an increased sense of Self-Efficacy helped people not only to reduce their excessive emotional reactions but also inspired confidence in being able to cope with future negative or avoidant reactions.

Bandura's work is positioned in the field of behavioral change and in particular approaches towards "dysfunctional inhibitions and defensive behavior" (1977, p.191). He believed that managing to obtain an "effective performance" of an act had a huge impact on the cognitive processes in the brain and that the notion of experiencing mastery is fundamental for positive change (1977, p.191). Bandura also believed that "much human behavior is developed through modeling" (1977, p.191) in that, among other things, by observing how other people deal with situations, we can learn to manage them too. Above all, modeling shows others that fear management or successful coping is possible. After this, one's own sense of Self-Efficacy can be developed by making incremental changes and using feedback to improve. He pointed out that it is usually a sum of experiences that create behavior, rather than one single one, and so people's beliefs and interpretations of situations can end up having more influence on their behavior than we previously realized. He saw motivation as being linked to such cognitive behaviors and how people predict future outcomes, which also includes "goal setting and self-evaluative reactions" (1977, p.193). For those who have positive beliefs, they are able to measure their performance against their goals and self-correct when necessary. "Both the anticipated satisfactions of desired accomplishments and the negative appraisals of insufficient performance thus provide incentives for action." (1977, p.193). Essentially, in his paper he proposes a theoretical framework where "the concept of Self-Efficacy is assigned a central role, for analyzing changes achieved in fearful and avoidant behavior" (1977, p.193). At that time this was a very new proposal. One of the underlining concepts was that of "coping behavior" in which "the strength of people's convictions in their own effectiveness is likely to affect whether they will even try to cope with given situations" (1977, p.193), meaning too that people tend to avoid situations where they feel overwhelmed and unable to cope. Bandura considers that "having a serviceable coping skill undoubtedly contributes to one's sense of personal efficacy" (1977, p.196) as it allows one to deal with stress much more effectively. Clearly, from my perspective as an educator on matters relating to sustainability, within a climate change context, this will become more and more essential. Those who feel capable will persist in the face of obstacles, those that don't will give up. Bandura talks of different

magnitudes in "efficacy expectations" (1977, p.194), and that for some feeling Self-Efficacy in one area will lead to developing it in others, while others will limit their Self-Efficacy to smaller areas of action. Bandura also mentions that the context or environment in which we act needs to be supportive of any skills people already possess in order to incite more confidence and better actions. An environment which is "unresponsive" (1977, p.205) or punitive, will instead lead to disengagement as people's efforts do not entail positive outcomes. Indeed, "anxiety activates defensive behavior" (1977, p.208).

In 1981, Bandura looked for links between proximal self-motivation and Self-Efficacy. The proximity of the goals increased self-directed learning, mastery of the subject and the attraction of it. Self-motivation was a first imperative for prolonged study. For self-motivation, self-satisfaction was a condition to obtain by the learners; its positive side are the anticipated satisfactions for each achievement and its negative side are for each dissatisfaction, for not achieving performances (Bandura, 1981, p.586). To make the evaluation possible, goals needed to be explicit, measurable and close by in time (1981, p.586). Defined subgoals which contribute to larger ones, especially when orchestrated in continuity, also proved motivational and conducive to Self-Efficacy and thus encouraged effort and persistence. Indeed, Locke, Cartledge, & Knerr, (1970) say that "When people aim for, and master, desired levels of performance, they experience a sense of satisfaction" (p.153 cited in Bandura, 1981 p.587). Bandura reiterates his 1977 thinking (quoted above in this paper): "By making self-satisfaction conditional on a certain level of performance, individuals create self-inducements to persist in their efforts until their performances match internal standards. Both the anticipated satisfactions for matching attainments and the dissatisfactions with insufficient ones provide incentives for self-directed actions" (1981, p.587). He clearly considers this essential, and given the above conditions for goal definition and attainment, satisfaction acts as a marker of Self-Efficacy.

Dale H. Schunk, an educational psychologist professor at the University of Houston (1984) was interested in how Self-efficacy affected "achievement behavior" particularly with regard to how people formed "efficacy judgments" taking into account "factors as perceived ability, task difficulty, effort expenditure, performance aids, and outcome patterns" (1984, p.48). Accumulated research throughout the 1970s demonstrated that "students' achievement expectancies affect behavior" (1984,

p.48), which was novel thinking at that time.

Recognizing prior theoretical work on the "influence of personal cognitions on achievement behavior", Schunk defined "Self-Efficacy "as "personal judgments of how well one can organize and implement behaviors in situations that may contain novel, unpredictable and possibly stressful elements" (Schunk,1984, p.48). Self-Efficacy as an enhancer of skills development, proved effective when a model was provided, rules applied and corrective feedback given. As Bandura has already stated, students with a "low sense of efficacy" (1984, p.48) try to avoid it whereas those with a high sense actively participate. Schunk was interested to find out how people got a sense of their levels of Self-Efficacy, and cites Bandura who suggested four sources: "self-performances, vicarious experiences, verbal persuasion, and physiological indices" (1984, p.49) as we saw previously. Essentially, and Schunk cites Bandura again, the effect of awareness about one's Self-Efficacy "depends upon how it is cognitively appraised" (1984, p.49). Schunk saw feedback as playing a key role, as well as modeling, good instructions, but also persistence. He created a "path model" to show the interrelations between the four key factors he chose for maximum effectiveness which were: Instructional Treatment - Self-Efficacy - Skill and Persistence.

He also highlighted that when using goal-setting one needs to consider "specificity, difficulty level, and proximity" (1984, p.52). One can also consider how far into the future the goals project and how having goals which are close in time can really support Self-Efficacy. Today we may call that the notion of *small wins* and still widely use the concept of "attainable" goals (1984, p.54). Schunk also comments that being able to set such goals usually needs "training and experience" and is not an automatic skill (1984, p.54). He also mentions how motivation is encouraged by such wins, and that rewards should be part of this learning and improvement process. However, one must be careful not to make the reward the goal which can create a negative feedback loop, instead of the feeling of competency at achieving the goal. He also mentions how issues relating to self-worth may be triggered by a sense of failure, especially on our high- ability social expectations, and if this happens, rather than confront this feeling, people will blame "bad luck" or "insufficient effort" (1984, p.56). He concludes that "Self-Efficacy, therefore, is concerned with people's judgments of how well they can use the abilities they possess" (1984, p.56).

3.2.3 Flow and education

The next key text in education and experience, *Flow* by Mihaly Csikszentmihalyi (Professor in the Department of Psychology at the University of Chicago) was written in 1990 after years of research on "the positive aspects of human experience - joy, creativity" and "total involvement" (1990, p.xi). It doesn't focus on education per se, so a deeper review of the chapter *Flow and Education* he wrote in 2014 was included here which applies his concepts directly to the educational experience. A brief overview of his original 1990 work is here too as many of the articles referred to this concept, even if his initial goal was to affect people's sense of happiness and well-being. His goal is to present principles on how to achieve this in a way that can be applied to anyone's daily life. He observes we still don't understand "happiness any better than Aristotle did" and in many ways, have made "no progress at all" on that subject (1990, p.1). He remarks that in spite of our increased wealth and material possessions, there are still many who feel bored and anxious, a condition he inspires to change. Essentially, he explains that happiness "is a condition that must be prepared for, cultivated, and defended privately by each person. People who learn to control inner experience will be able to determine the quality of their lives, which is as close as any of us can come to being happy" (1990, p.2).

Moving to the chapter *Flow and Educatio*n, Csikszentmihalyi cites an expression he heard in Hungarian which says "the roots of knowledge are bitter but its fruits are sweet" (2014, p.129) and claims all his years of work aim to counter this saying, as he does not believe knowledge itself is bitter. He believes schools have a tendency to sour the educational experience for many. He sees the problems in learning as "affective, emotional, motivational, and not intellectual, not cognitive" and is worried about the influence of computer thinking on education as humans are not ready to "start crunching information" (2014, p.130) as soon as they get up. He finds many people resist and fight against education, primarily in his view, because it is forced and not a creative process containing Flow. His definition of Flow is "what you feel when you're doing things that are so enjoyable that you want to pursue them for their own sake" (2014, p.132). He sees artists and inventors as good examples of people who experience Flow on a regular basis. He created a table of the 9 conditions of a Flow experience (see Figure 2 below), which has many similarities with the Self-Efficacy criteria we gathered in Table 6 in 6.1

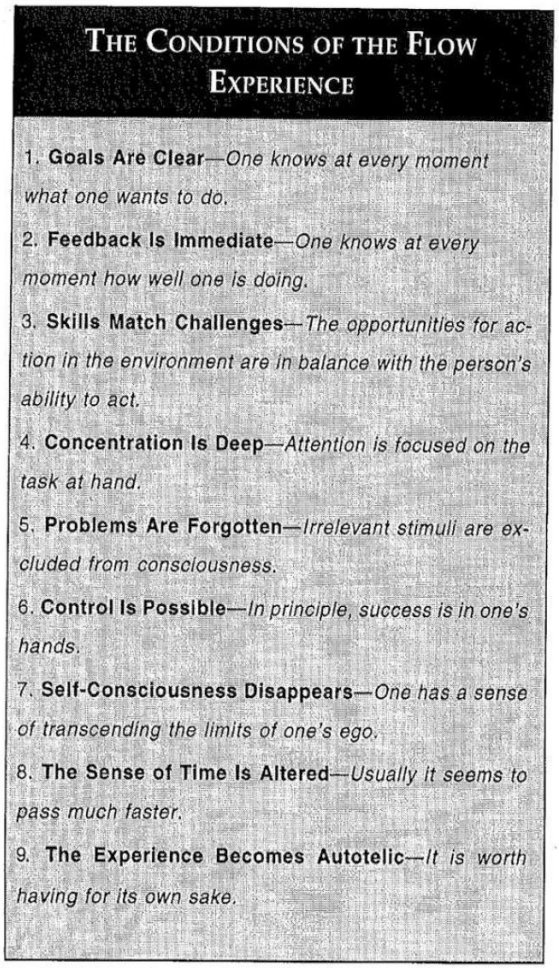


Figure 2 Csikszentmihalyi Conditions of the Flow Experience (2014, p.133)

He carried out research measuring people's experiences throughout the day using ESM (Experience Sampling Method) and found that "extreme concentration and focus" where "your mind cannot have a chance to go off on tangents" (2014, p.134) was hugely important for Flow. This would then become a feeling of "ecstasy" (2014, p.134) where people feel they have stepped out of everyday life concerns and moved into another sphere of experience. He pointed out that humans, in his opinion, have always needed a certain element of ecstasy in their lives, which we access through the arts, sports, and architecture, which gives us "a chance to reflect, to experience a different way of living" (2014, pp.134-5). However, he argues you don't need "the architecture or the social organization of ecstasy" (2014, p.135), you can also find it alone in deep concentration.

Another aspect of Flow, is having the knowledge or understanding of what you need to do next, of having "doable, clear steps", as "those little goals are what directs your attention, what makes you

able to focus - not the overall goal of getting to the top of the mountain. That's too far; you can get distracted by it" (2014, p.135).

Thirdly, is the question of feedback and knowing how well you are doing. Csikszentmihalyi says this is due to "the clarity of the goals and immediate feedback that the attention keeps getting carried and focused" (2014, p.135). In fact, he describes distraction as being caused by lack of clarity in what to do next and no clue as to one's success rate.

A fourth aspect is that the task in hand feels "more or less possible to do, given the skills they have", meaning "the challenge and skill are in balance" (2014, p.135). He remarks that keeping this balance is "very essential" otherwise people will become "anxious" or "bored" (2014, pp.135-6). He also believes that feeling self-conscious is incredibly unhelpful saying "self-consciousness is a real burden" and leads people to feel "defensive" and "inferior" (2014, p.136). So, educators must do as much as possible to avoid that state of mind in their learners.

He also discovered after a Flow experience people felt transcendent and part of something larger than themselves, which positively impacted their state of mind. The Flow also made time fly by and the experience of the activity produces "its own reward" (2014, p.137). He believes using the Flow approach conditions can help people learn to enjoy things they initially hated, such as using computers in his case.

The balance of challenge and skill is shown in the graphic below (Figure 3) and can used to assess participants' feeling of Flow. Csikszentmihalyi suggests that improving skills and knowledge move in a step-by-step fashion with people moving in and out of Flow as challenges increase and then skills improve, moving to the next level. He considers anxiety to be a key indicator of (the feeling of) low skills and too high challenge and that when a sense of Flow is achieved people are more and more attracted to the activity and interested in the challenge/skill improvement.

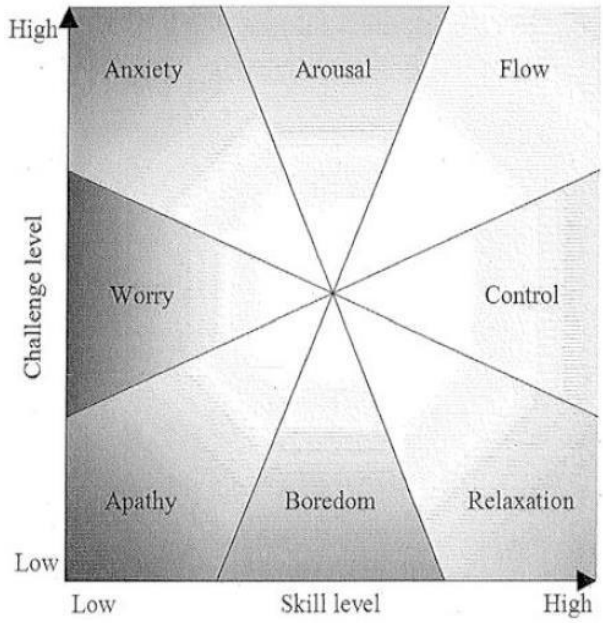


Figure 3 Ratio between challenges and skills, Csikszentmihalyi (2014, p.139)

The author would like to see more people reaching a state of Flow in their everyday lives and finds most spend their days in a sense of "apathy" (2014, p.140) expressed by watching TV or other passive activities. He argues people will always "seek out Flow" (2014, p.140) so if they don't get it at work or at home, they will search elsewhere, such as in video games or even in crime. Furthermore, if we see Flow as energy, we realize it can be both good and bad, so Csikszentmihalyi, refers to Plato saying "the main task of educators is to teach (young) people to have pleasure in the right things" (2014, p.140) and that forcing education upon them is not the answer. Essentially, he believes "if you don't learn to enjoy the moment, if you don't know why you are doing it moment by moment, you keep postponing the rewards of life" (2014, p.142) which can be very unmotivating. One of the other key skills teachers need to give students is the ability to give themselves feedback, and points out that "an expert is someone who can give feedback" to themselves (2014, p.142). If one is able to create one's own goals, and generate useful feedback as part of an "internalized system", then one can become free as one would no longer be "dependent on the outside" (2014, p.143). For Csikszentmihalyi, the ultimate success as an educator, is to give people the desire "to go on learning for the rest of life" and thereby have enjoyable and Flow-filled lives (2014, p.147).

An article by Lonka & Ketonen (2012) explores how levels of interest and "academic emotions" influenced "Flow experience, self-study time, and study success" (2012, p.63). The research was

carried out in Finland with some first-year teacher students, using questionnaires. Three types of emotional profiles emerged: “engaged”, “unstressed and anxious” (2012, p.63) with the engaged getting the best results and the unstressed the worst. The researchers found that having a “sense of competence” was crucial to success (2012, p.63). Lonka & Ketonen wished to find a way to help students who suffer from various emotional or psychological obstacles in their learning.

Also, the future is uncertain so we will need to constantly adapt our methods to better cope with the new unforeseen contexts that will arise. In order to manage “the relationships between emotions, motivation, study success, and well-being” positive psychology will be a big help (2012, p.64). To date, academic emotions have largely been ignored but Lonka & Ketonen argue that needs to change, as they believe they are related to “learning strategies, cognitive processes, self-regulation, and academic achievement” (2012, p.64). One area these authors focus on is the concept of Flow and how it can increase motivation. Csikszentmihalyi (1988, cited in Lonka, 2012, p.65) believed that such a feeling only arises when the challenge is relatively high and the person feels capable of facing the challenge. As Lonka & Ketonen state “Flow forces people to stretch themselves, to always take on a challenge, and to constantly improve their abilities” (2012, p.65). In contrast, if the “challenge is high, but the person feels inadequate, this results in anxiety”, while apathy or boredom appear when both the “competency and challenger are perceived to be low” (2012, p.65). Both authors find Flow to be “an interesting concept, since it combines cognitive challenges with emotional states” (2012, p.65). Indeed, becoming an expert means also being able to tolerate “anxiety and uncertainties” (2012, p.65) and Flow certainly needs “concentration and engagement” in order to appear (2012, p.72). Lonka & Ketonen wonder how to balance the likely appearance of some form of anxiety in face of a challenge, in a way that motivates rather than paralyzes, and leave this as an open question other researchers can pursue.

3.3 Economics and Wealth

Modern economics tie in with the belief that focusing only on money and GDP are not sufficient factors when thinking in terms of sustainability and well-being. Two most interesting texts are *Doughnut Economics* by Raworth (2017) and *Regenerative Capitalism* by Fullerton (2015) which view economics from a more holistic viewpoint and correspond to the values to be included in my educational programs. However, Raworth was my main chosen model to apply to my results when I

analyzed the answers of my interviews. A summary of Fullerton can be seen in Appendix 2.

Doughnut Economics, by Kate Raworth, whose main premise is that real change only comes from building new economic models, demonstrates how the old ones were rendered “obsolete” (Raworth, 2017, p.4), rather than trying to fight current reality. She believes the current version of capitalism is outdated and unable to deal with the complexities of today's reality. She points out how limited capitalism is and takes us through a brief history of economics, beginning with reminding us that in Greek economics literally translates to “Rules of the Household” (Raworth, 2017, p.4) and how we ended up with the understanding we have today. She highlights that “economic theory will play a defining role” and sees it as the “mother tongue of public policy” and essentially “the mindset that shapes society” (Raworth, 2017, p.9). She asks us to consider economics from a perspective of “humanity's long-term goals” and to find instead what kind of “economic thinking” (Raworth, 2017, p.10) can lead us towards success in achieving such goals.

She proposes seven new ways to think about economics making it useful and relevant for the 21st century. Please see Figure 4 below for the list.

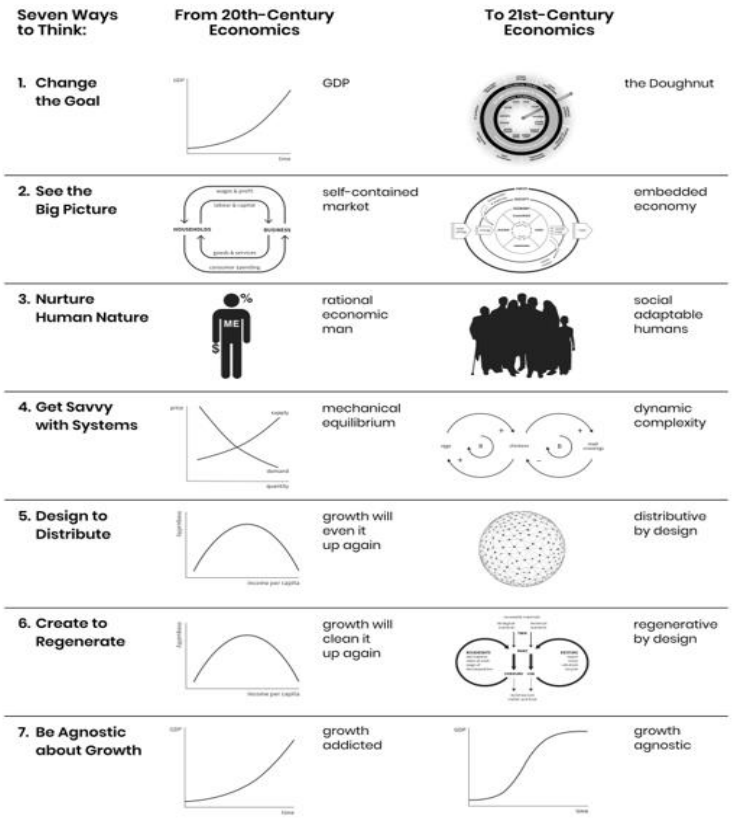


Figure 4 Seven Ways to Think (Raworth, 2017, p.26-27)

She believes these new ways of thinking allow for “new narratives” (Raworth, 2017, p.28) between different sectors of society.

From my perspective, the most important suggestions she has are to “thrive in balance”, reaffirm the “core role of the household”, change the view of “rational economic man” as a “self-interested, isolated, calculating, fixed in taste, and dominant over nature”, and replace it with a more realistic picture of humans as people who are “social, interdependent, approximating, fluid in values, and dependent upon the living world” (Raworth, 2017, p.28), and embrace system complexity. By taking these factors into account with economics we will end up with far more chances of creating a more just and safer world. Above all, she argues economies should allow humans to thrive and that the concept of economic growth at all costs is outdated and now, destructive as leading us to “ecological, social and financial collapse” (2017, p.70). She disagrees that the only value which current economics recognizes is that of utility and the price which the market gives something. The notion of economic growth as being able to continuously improve human life and well-being is false in her eyes. One of her biggest complaints about the use of GDP as a measurement is that it simplifies the economic reality of a country and its production, but it has also led to paralysis, in that neither economists nor politicians dare to ask the question as to whether “further growth is always desirable” (2017, p.40). As Robert Kennedy stated in 1968 about GDP: “it measures everything in short, except that which makes life worthwhile” (Kennedy, Robert F. 1968). As Donella Meadows (co-author of 1972 *Limits to Growth*) asked in the late 1990s “growth of what, and why, and for whom, and who pays the cost, and how long can it last, and what's the cost to the planet, and how much is enough?” (as cited in Raworth, 2017, p.40). Raworth also quotes Amartya Sen who stated that any development should advance “the richness of human life, rather than the richness of the economy in which human beings live” (cited in Raworth, 2017, p.43).

The model Raworth offers is a doughnut shape which depicts both the limits of the planetary boundaries and what under-investment in human society will create.

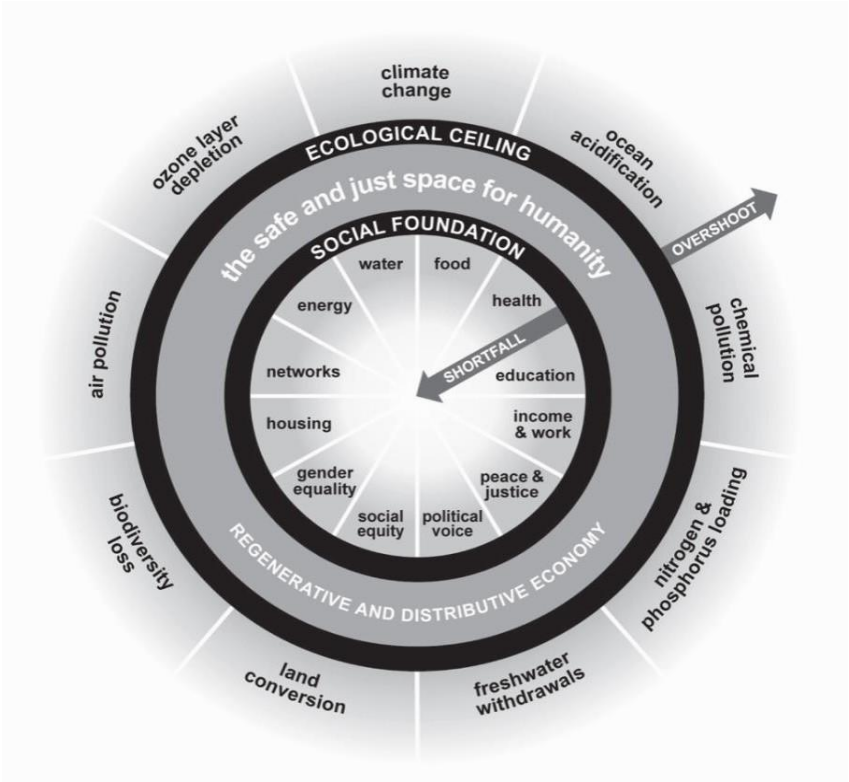


Figure 5 The Doughnut (Raworth, 2017, p.44).

As we can see from the graphic on Figure 5, Raworth has included housing as a separate category with the social foundation section, as well as education. She aims to show how everyone's needs can be met while “safeguarding” (Raworth 2017, p.33) the natural world upon which we depend. She considers human well-being essential, and as being built of the 12 different categories she included within her social foundation. She believes, as I do, that all members of mankind should be able to thrive in a “safe and just place” (Raworth 2017, p.45). Her research discovered that 24% of the world's population in 2012 were living in slum housing (Raworth 2017, p.301), demonstrating that new solutions to housing are needed. In Europe, buildings account for 40% of all of EU’s energy consumption, 36% of CO2 emissions (Kurmayer, 2023). In France close to 7 million or 25% of residences are deemed “energy sieves”, meaning spending 330kWh/m2 per year (Prati, 2022).

My educational program will include how to take energy consumption and emissions into account. But I am also interested in the foundations of an economic system based on fundamental values rather than just technical or financial aspects of it, hence giving a strategic direction rather than micro-managing our lives. She quotes economist Manfred Max-Neef’s proposition of a set of fundamental

human needs - such as “sustenance, participation, creativity and a sense of belonging - in ways that are adapted to the context and culture of each society” (Raworth, 2017, p 42.). This is the kind of framework I would very much enjoy using as the direction given to the very practical aspects of incorporating these values in home choices and I believe the following categories of her Social Foundation are applicable within my project: housing - education - water - energy - networks - social equity - peace and income. Raworth suggests that companies ask themselves how they can align to the Doughnut and which aspect of it they can contribute to. She refers right back to the start of economics in Ancient Greece, and quotes Xenophon who asked “How should a household best manage its resources?” (Raworth 2017, p.56) moving from single households, to eventually the city of Athens. Adam Smith then followed this with his work on wealth of nations. Raworth proposes that instead of nations and GDP, we should move forward into thinking of the “planetary household” and how the “art of household management is needed more than ever for our common home” (2017, p.57). Think of the potential: “60% of the area expected to be urban by 2030 has yet to be built” (2017, p.59)

Raworth views the household as a core element in human society and underlines how this part of human life is invisible in current economic theory. She focuses mainly on the people, rather than the building itself, but this helps me position my work within an economic framework which supports sustainable development and shares my values. She points out Adam Smith made no mention of how his single mother supported him by housing him, cleaning his clothes, feeding him, all while he wrote his book *The Wealth of Nations* as an unmarried childless bachelor at the age of 43. She reveals the divide between paid and unpaid labour and that we should view the latter as a “core economy” (Raworth 2017, p.79) rather than as something secondary. Due to its unpaid nature, it is “routinely undervalued and exploited” and its values of “time, knowledge, skill, care, empathy, teaching and reciprocity” (Raworth 2017, p.79) are also ignored. However, these are the essentials of a well-functioning human society, and includes community, neighbors, and other supporting networks. She states recognizing the importance of the household and its centrality is the “first step” (Raworth 2017, p.81) of the new macroeconomy.

With regard to the environment, some of her suggestions include the teaching of “eco-literacy” (Raworth, 2017, p.115) in schools and she mentions the viewpoint of Chief Oren Lyons (Iroquois Onondaga Nation, USA) who says, “What you call resources we call our relatives… if you can think in

terms of relationships, you are going to treat them better, aren't you?" (2005 cited in Raworth, 2017, p.116). She also brings up the fact that once a monetary price has been placed on things, it can actually reduce our sense of moral responsibility and in many cases erases "the social contract" (2017, p.120). She cites Sandel (2012) who says "Markets are not mere mechanisms; they embody certain values. And sometimes, market values crowd out nonmarket norms worth caring about" (cited in Raworth 2017, p.121). She discovered that when volunteers worked together in a community to garden, or collect rubbish, there was a strong sense of shared values and community, but when people were offered payment, few accepted and those that did lost any sense of ongoing care and responsibility. She concludes that mixing money with earth care can have severely negative impacts. Indeed, working instead to motivate behavior change based on "reciprocity, values, nudging and networks" (Raworth, 2017, p.123) may have far more long-term impact. She mentions how various nudges around the home can change behavior relating to use of water, electricity and rubbish, and the same impact is found within cities, such as green footsteps leading up to bins for people to throw rubbish in. From Meadows she cites "Before you charge in to make things better, pay attention to the value of what's already there" (1999, p.1 cited in Raworth 2017, p.159). All of these suggestions will have an impact in the way I design my educational enterprise.

Raworth mentioned the work of the regenerative economist John Fullerton, who came to believe the current economic systems were "the root cause of the ecological crisis" (Raworth 2017, p.234). His work has informed this paper and highlights much of what Raworth discusses. Please see Appendix 2 for a summary of his work in relation to this paper.

The purpose of this paper is not to give more power to the rentier economy[6] but to the 90%+ world population to acquire, maintain and use one's household. Most individuals in the richest countries (based on salary) invest more than two-thirds of their wealth in their household (Financial Samuraï, 2023). Reflecting on Fullerton, this is *only* financial wealth. Yet, of course, it matters, keeping in mind that this is *only* the purchase price.

This is when I hope to connect the dots with a program on home choices. As the financial impact of a home is important, so are all the other costs related or adding to the cost of having a home. As Raworth, Fullerton implied and the researchers from *Earth for All* noted we would have to make sure "that the rich

pay their fair share when considering both income and wealth." (Dixson - Declève, 2022, p.90). This is about fair taxation on income and wealth but to take the larger view of our embedded systems it also proposes a new transitional economy based on the embedded contexts of society and environment that we depend on and the conclusion is that "once the benefits from nature are shared with citizens, as in the commons of old, wealth begins shifting back to workers, communities, and households." - as in the commons of old wealth, building an adaptive and adapted program which connects to the big picture with the best solution for all and locally, integrating all aspects of wealth and ensuring that they contribute to a thriving Planet and the long-lasting well-being of humanity - is what I have in mind. Homes and systems of homes as per shared buildings, city blocks, cities all can contribute in multiple ways to positively impact the five turnarounds proposed in Figure 6 hereafter.

[6] "The rentier economy is about charging for access to resources, limiting competition, and, in short, extracting value more than creating it. It then funnels such economic rents (unearned surplus) to the benefit of what economist Michael Hudson calls the FIRE sector: finance, insurance, and real estate. This activity is not a bug in the current system, it is a predictable structural outcome of the rentier capitalism gameboard." (Dixson-Declève, 2022 p.153)
"A lower return for the rich is better than the end of the world. Here is how to do it" (Dixson-Declève, 2022 p.21)

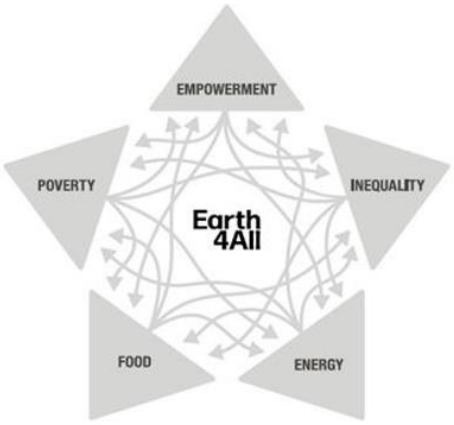


Figure 6 "The five turnarounds are interlinked so that together they create a whole system transformation" (Dixson-Declève, 2022 p.21, Figure 1.6)

3.4 Place

James Buchanan explores the ethics relating to place in his 2019 Chapter *The Proximate and the*

Distant. He highlights how place is formed by the relationships we have with and within it. Citing the following philosophers (Buchanan, 2019, p.90), Buchanan looks at the work of Aristotle (Aristotle, 2019), Confucius (Lau, 1996), Casey (1998, 2001), Heidegger (Casey, 1998 cited in Buchanan, 2019, p.90) and Tuan (1977, 2012), questioning whether we need to update our ethical stance in today's globalized and mobile world. In his view, Casey sees place as something to be "experienced" (2019, p.88) and is intimately connected to the physical of our bodies. Casey also believed that *space* was inherently different from *place*, as *space* is experienced more as a "void" without the web of interconnections we have in *place* (1988 cited in Buchanan, 2019, pp.88-89). Buchanan believes "self as both agency and identity are always embodied and located; both are equally critical parts of a complex system of self, body, and landscape that comprise key dimensions of what I call the proximate" (2019, p.89). Where Casey stated "there is *no place without self and no self without place"* (Casey, 1998), Buchanan adds "there is also no identity or agency without place" (2019, p.89).

Heidegger's approach saw place as holding a "complex web of relations" (Buchanan, 2019, p.89), but that this included a moral dimension of "authenticity and care" (2019, p.89). Heidegger also believed we hold a natural anxiety in us, as we know we will die so "Being is an issue" both ontologically and morally (2019, p.89). This could also explain more about the work of Armstrong et al. in their quest to discover and counter the "dragons" of inaction they mentioned (2019). Buchanan sees Heidegger's position to be suggesting we should take this anxiety "seriously" and therefore live carefully by both discovering ourselves and taking responsibility for our "being" (2019, p.89). He states "authenticity is ultimately about the relationships through which we manifest care for our world" (2019, p.89). Both philosophers reveal an interest with the idea of "closeness" and "responsibility" and how limits are applicable to place and we should see them as a positive thing (2019, p.91) as they define the place itself and the possible relationships within it. Buchanan asks "how far can we extend that horizon (limit) before the understanding and principles of that place begin to disintegrate into the spatially and temporally distant?" (2019, p.90). Tuan suggests that another concern is that of scale, as "unlimited scales results in the world of… cosmopolites: individuals who freely associate beyond the limits of their community" which poses a challenge in "sustaining neighborly commitment and care" (Tuan, 2012 cited in Buchanan, 2019, p.90). Buchanan adds that "while cosmopolitanism promotes individual excellence and the highest level of achievement, it also has the effect of a corresponding loss of community" (2019, p.90). Indeed, Buchanan asks whether a cosmopolitan person can even be "a

moral agent" (2019, p.90) and if so, how can that be enacted? All the philosophers cited believe that it is the "relational experience" that "transforms space into place" (2019, p.91). Buchanan emphasizes "Place is meaningful place in proportion to the depth of our sense of relation to it and within it" (2019, p.91).

It is mainly within the field of ecological thought and environmental ethics that the "ethics of place" (2019, p.91) has become a new branch of study. Buchanan (2019) discovered multiple work where the "strong moral focus" is concerned with "our relationship to nature and the importance of a sense of responsibility because of and to that relationship" (2019, p.91). As we become increasingly confronted with the limits of nature and of our relationship with it, can an approach of seeing ecology and proximity as connected, help us make better "ethical decisions" (Buchanan, 2019, p.92), and if so in what way? Buchanan argues that traditional ethics only considered a more proximal approach, but these ethical ideas weaken considerably when applied to "the complexity of spatial and temporal distance" leaving us with the "moral quandary" (2019, p.92) that we have today.

Buchanan takes the work of Aristotle and Confucius as they both had "virtue-based ethical systems" which they claimed were "universal" and could "transcend the proximate" (2019, p.92) and questions if this is actually true. Both philosophers believed virtues are manifested in place (proximate), and that virtue cannot exist in a "relational vacuum" and virtue is always conditioned by limits and corresponding responsibilities (2019, p.92). Aristotle thought family was important for moral and virtue development, but that the surrounding city or region, where one lives has more importance and influence, however, both "are the proximate place of virtue" (2019, p.92). Due to this relationship to place, virtues can be seen as "ends-in- place" as space is more of a "social vacuum" (2019, p.93). Equally, the concept of *phronesis*, which Aristotle supported (Kristjánsson et al., 2021), represents wisdom or intelligence applied in specific situations with a specific corresponding appropriate action, a type of "practical wisdom" (2019, p.93). Our very being is always connected to place so Aristotle's view was that "agency and identity are constituted only in the proximate - as relational, as limit/horizon and responsibility" (2019, p.93).

Confucius focused more on the different ethical roles between people, where the first is the family and then the extended family. This creates "a place filled with a variety of relationships, roles, and

responsibilities" (2019, p.94). Virtues of benevolence, compassion, humanity and reciprocity are what transforms space into a moral place (2019, p.94). We also need honesty, wisdom and integrity (2019. P.94). Compared to Raworth list in 3.3. here the common value is benevolence. Buchanan points out that this creates more nuance in our relationships and how "space, as experienced, is not structured. Place, as experienced, is always structured" (2019, p.94), basically having no limits means having no place (Casey, 1998). Confucius, therefore, suggests "there is a hierarchy of responsibility based on the proximate" (2019, p.95). So, the ethics here is not related to ecology but proximity of either the city (polis) or the extended family. Buchanan again asks "what happens morally when place is displaced and when "spatial and temporal distance" is introduced? (2019, p.95).

To answer this Buchanan goes to systems theory as developed by Ervin Laszlo (1972). Laszlo stands in opposition to the Cartesian "mechanistic worldview" where everything is viewed as separate "replaceable" parts (2019, p.95). Laszlo believes in a more holistic view, where things are integrated systems where we move "constantly between parts and wholes" (2019, p.96). As Buchanan summarizes "systems thinking focuses on the dynamic processes of relationality" and the idea of "complex webs of relationship(s)" (2019, p.96). For Buchanan this is a radically different way of thinking because the "inherent holism" means issues of limits are now irrelevant and we can explore the relationship of "place, proximity and responsibility in radically new ways" (2019 p.96). He states:

"A systems approach focuses our attention on dynamic patterns and structures and the way in which feedback loops both reinforce and change those. It forces us to become aware of patterns and structures that are constitutive of our relationships and thus of our identity and agency, challenging us to understand them in increasingly complex ways. The awareness itself becomes part of the system and inevitably creates its own feedback loops that change the patterns and structures" (2019, p.96).

This brings us towards a network or ecosystemic way of thinking, and allows us to envisage things in terms of unquantifiable "relational patterns" which we can start mapping with the understanding that the map is "dynamic" and "in constant flux" (2019, p.97). Additionally, networks are inherently nonlinear. Buchanan writes that the concept of "emergence" is popular among systems thinkers where "the dynamic nature of systems means that new patterns constantly emerge". He sees this as

a natural outcome of “complex relationality” (2019, p.97). Regarding virtues then, they would now be framed as “emergence and pattern” rather than being fixed behaviors or “character traits”; virtue then “is always in an interrogative mode” (2019, p.97). This all departs sharply from previous interpretations of ethics, especially with regards to the idea of linear cause and effect. It also demonstrates that “complexity is an unavoidable dimension” and no matter how much people may be attached to the reductive “Cartesian certainty”, it can clearly no longer serve us well as we move towards more complex, holistic, relational futures (2019, p.97). Following this, it means that ethical decisions will now be part of a much larger complicated landscape, including both proximate and distant relations, but even more critical for making inclusive and realistic decisions, “the moral principle becomes an emergent approximation and the ethical decision becomes the moral wager” (or response) (2019, p.98). We must include the whole chain of actors and objects. Lastly, Buchanan underlines that “it is the deep, authentic, concernful engagement with place and the proximate that has the power to shape our moral identity and to motivate us as moral agents” (2019, p.101).

4 METHODOLOGY AND SCOPE OF EMPIRICAL DATA

Introduction to the chapter

The research paradigm is constructivism, where open-ended questions and inquiry started and helped build the findings and conclusions. Constructivism is based upon the idea that social events and ideas are "only produced through social interaction" (Bryman, 2012, p.33) and are in constant flux. Here, an inductive approach was taken and the epistemological position is interpretivism, where the interest was in the "subjective meaning" (Bryman, 2012, p.30) gathered from data.

From the literature review, a framework for analysis was to be applied to the interviews after a first round of coding, which combined various keywords and ideas taken from the authors in the literature review, as posted below in Table 2, Analysis Framework Key Words and Table 3, Learning design for sustainability based on Self-Efficacy and Flow.

External Environment	Internal Feelings	Values, Attitudes, Beliefs (VAB)	Wealth
Collective Action Cosmopolitanism Ecology & Proximity Embodied Agency & Identity Energy Environmentally Friendly Products Ethics of Place Friendly Travel Moral Responsibility Networks Peace Pollution Recyling Reduced Waste Relationships to Place & People Social Equity Water	Cognitive Dissonance Empathy Peace & Action Positive/Negative Self-Worth Psychological Defenses Relationships Self-Efficacy Sense of Belonging Sense of Competence	Attitudes rigid/flexible Collective Efficacy Competition/Cooperation Identity Protective Cognition Moral Responsibility & Identity Personally relevant & meaningful Relationships	Financial Assets Systemic Thinking Income Long-term Benefits Positive/Negative Impact Taxation Relationships over Resources Resource Management Social Equity Thrive in Balance

Table 2 Analysis Framework Key Words

Educational Experience
Appropriate Challenge Level
Arouse curiosity
Autotelic (activity for its own sake)
Climate Literacy
Collaborative & Democratic
Collective Efficacy
Constructive & Immediate Feedback
Creativity
Ecosystemic Thinking
Educational Ethics
Mastery
Meaningful & Relevant
Measurable & Attainable
Modelling & Rules
Overcome Barriers
Patience & Persistence
Positive & Supportive Environment
Positive/Negative Flow (9 criterias)
Self-Efficacy
Self-Motivating
Self-Reflective Feedback
Specific & Desirable Goals

Table 3 Learning design for sustainability based on Self-Efficacy and Flow

Unfortunately, from an economical perspective neither Raworth (2017) nor Fullerton (2015) provided any real form of framework for analysis, so I will be developing one in the next step of my further research from what I discovered here. Similarly, there was no framework for analysis about place from Buchanan (2019), which highlights how new this topic is and how much more research needs to be urgently carried out to make such knowledge and viewpoints usable in practical ways by households, and reflected by policy makers and politicians.

As time was limited, I did ask open questions to note the expression of knowledge and connectedness to the notions held in the holistic economics approach of Raworth and Fullerton of my respondents. This was to weigh their level of Self-Efficacy when it came to sustainable home choices, and I did not answer as per what *value* nor specific *wealth* I was referring to in my questions to let my respondents answer with their preferred understanding of these, as I explain in Results.

I carried out inductive qualitative research using interviews inspired from published literature. My main motivation was my personal interest in the subject of housing choices and how to build a training course for adults and in this case, to help them with house acquisition. After speaking to people in

different countries over the years about this subject it became increasingly important to understand the different viewpoints and concerns, which would be best collected via interviews. My data was collected to start building an idea of what this landscape currently looks like and to discover which theories can best be applied.

4.1 Research paradigm

Following the theoretical framework, I conducted a first random round of six semi-structured interviews with four Finns, a Peruvian and a Spaniard to test my questions phrasing and clarity and to get first experiences of interviewing around learning and house acquisition. This allowed me to get into a listening mode and begin to incorporate some learning theories and the importance of sustainability in the home buying process from this initial feedback. Despite some similarities, as the need for safety, the attention given to the current energy focus, the ambivalence of real estate agents, there were also great differences between these first six, as with the socio-cultural context, the market and even legal environments, for example. I decided that I would focus on the same country, the same language, the same culture to dig into finer differences, commonalities or trends. I interviewed ten French nationals and though I sometimes was asked to rephrase my questions they all had precisely the same wording to start with.

4.2 Interview Questions

Interview questions were designed and completed in an iterative fashion after the first few interviews, in order to reach as much clarity as possible. Each question was designed to cover a different aspect or topic taken from my readings and the theoretical background, which you will see in parentheses after each question.

A rich learning experience :

1. Describe a learning experience– alone or with other people - when you forgot about time? (Flow)
2. During a learning experience, please describe your level of expectations before and your level of satisfaction after? (Self-Efficacy)
3. Were there any positive factors from people around you: like other learners, a Trainer, or any other people? (Education)

A house/a flat/your next home: Since when are you the owner of a house or a flat?

4. Getting a house (or a flat), what seems difficult or what kind of help do you need? (Self-Efficacy on House Acquisition)
5. In a house (flat), what are you looking for to ensure you make the right choice? (Self-Efficacy, Values & Wealth)
6. Getting that house/flat, how can you make sure that you built a good checklist – with what's important? (Self-Efficacy, Values & Wealth)

Increase Wealth:

7. On a scale of 1 to 10, how sure are you that your acquisition will keep its value? (Self-Efficacy & Wealth)
8. How can you check that your acquisition has a chance to increase in value? (Self-Efficacy & Wealth)

Increase Sustainability:

9. What's most important to have AROUND your house? (ESD & Place)
10. What's most important for a SUSTAINABLE house? (ESD & Place)
11. How can you determine THE IMPACT of your house on the environment and on society? (ESD & Place)

4.3 Conducting Interviews

The interviews were carried by visioconference using G-Meet. They were meant to last no longer than 30 minutes and lasted 11 minutes for the shortest, 33 minutes for the longest and 24 minutes or more for six out of ten. They were made between March and April 2023 and my limited budget, impacted by the software pricing, made me transcribe all of them in one go. I also needed time to let Braun & Clarke's (2012) analysis method sink in and went from the different steps of one to the next and back to the previous, or another, making sure I had done all the steps for all of them, but preferring to do my in-depth analysis with the variety and different points of view in mind, hence switching between the interview answers and analysis steps. This was against Braun & Clarke's proposed recommendations to do a full analysis of each interview with all the steps before going to the next. But it gave my thinking a fresher look each time. So although it may have taken more time to get into

the analysis each time I changed, it worked for me. I felt more open mentally that way.

Most of my interviewees were from my networks of friends, fellow students and a panel of professionals from different sectors and with different responsibilities. In order to ensure privacy interviewees have been left anonymous, first denoted only by the capital letter I for Interview and the number of their interview e.g. I4, for the fourth one. After my first tables, I would alter this to sometimes prefer to attribute a different name to each, keeping only their gender and following the alphabet. Hence I1 to I10 were re-baptized Anna, Bryan, Charles, David, Eric, Franck, Gail, Henri, Irene and Josy. This would help me stay connected to a person which I sometimes found helpful for my summaries on one or another, my analysis review and hopefully for my readers. Interviews were carried out in English and French and translated in English when necessary for this.

The main study here asked 35 to 55 year-old homeowners, six men and four women, to open up about positive learning experiences. Then, focusing on their home acquisition process, they were asked to reflect on the help needed and how they made their choices. Because money is at the centre of our society's focus, they were prompted to express their assurance in their ability to ensure the value of their life's most important asset. Lastly, further questions were asked to establish what, in their minds, constituted the social and environmental impacts when it came to homes. All this was done in order to look for confirmed, or new trends, and additional findings related to existing approaches or theories which could help build a useful training program on home acquisition.

4.4 Analyzing the interviews

The interviews were transcribed and analyzed following Braun & Clarke's (2012) thematic analysis methodology, mixing inductive and deductive reasoning to gain wider perspectives. This data analysis method consists of "systematically identifying, organizing, and offering insight into patterns of meaning (themes) across a data set" thus allowing the researcher to gather together the overarching ideas and discover any "shared meanings and experiences" (2012, p.57). I looked at both "latent" and "semantic" meanings (2012, p.58). This method felt appropriate for my research as it is both accessible and flexible and allowed me to return several times to my data and re-analyze it from different angles. The interview questions were semi-structured and designed to gain a better understanding of the participants' overall feelings and thoughts on their experiences. I had my own

initial ideas and themes, and then after doing the literature review, other questions and concerns became important and led to further data analysis.

The results on the example of a rich learning experience were organized by counting equally the presence of each of the 6 criteria found out of the 7 main criteria of Self-Efficacy (Table 6) and the 9 main criteria of Flow (Figure 2), adding them and dividing them by 6 for Self-Efficacy (or 9 for Flow) to obtain a first weighed score, with a potential score range of 2 to 5 for Self-Efficacy and 1 to 5 for Flow, in this case. Two different weighing were made for Self-Efficacy depending if the time was real or felt, as defined in Table 4.

In Table 6, the formula used for weighing is simply the addition of the columns score divided by the number of those columns, or 6 columns. I only made an exception for Bryan, where the calculation is on 5 columns only, divided by 5 (4+5+5+4+5)/5 = 4.60) based on real time (not felt time). The criterion of *Mastering* that particular activity did not apply to Bryan like in the other interviews' chosen learning experiences. Weighted Self-Efficacy results were either based on real time (above) or felt time, providing finer results using felt time (4.67 and 4.80, respectively for David and Bryan). Bryan chose a personal learning experience which was a cultural leisure trip, with clear goals of standard off-time enjoyment and experiencing a different culture and lifestyle.

The questions (7 and 8) on Wealth, and those relating to Sustainability and the Sustainable House (9,10 and 11), allowed to confirm the quick evaluation score (on the basis of Appendix 7) as per the difference between the self-evaluation of the participants to make sustainable home choices and their actual ability to assess and act upon it. The quick evaluation score further explained in this section before and with Table 5.

Time, proximity of goal and positive learning experiences. Time and proximity of goal were criteria of importance for Self-Efficacy (with ideally a short time to the objective) as for Flow (with an altered or lost sense of time). As for positive learning experience, Self-Efficacy refers to a high level of satisfaction, and Flow to an autotelic experience, where the experience would be carried only for the sake of it and for no other additional gain. On this last definition of autotelic experience, Eric, having chosen his altogether positive experience at work would not have considered it without the financial remuneration component, giving him a 1 score on autotelic experience for Flow, or the lowest score for that criterion.

Positive learning experiences when time "flew" actually lasted several days (I1, I6, I8), a few weeks (I2), 6 months (I7), a year (I4, I9, I10), years (I5), even 20 years (I3)

These learning experiences which "went *so* fast" were not necessarily short-lived ones!

Real time scoring		A learning experience where you forget about time.. Is not necessarily a short lived one!					
Interviewee	Name	Several Days	A few weeks	6 months	1 year	Years	20 years
I1	Anna	**5**					
I2	Bryan		**4**				
I3	Charles						**1**
I4	David				**2**		
I5	Eric					**1**	
I6	Franck	**5**					
I7	Gal			**3**			
I8	Henri	**5**					
I9	Irene				**2**		
I10	Josy				**2**		

Table 4 Time flies if the learning experience is satisfying and Self-Efficacy is high

In Table 4, as per the proximity of time to the goals (in reference to 3.2 as a criteria of Self-Efficacy), I attributed a score on 5 for the real time from start to achievement of the goal as shortest. This principle was applied in Table 6 and 7 on Self-Efficacy Results. This helped weigh Self-Efficacy with the real time and compare it with the felt time. And so "1" is for several years or 20 years (the experience of being a father), the weakest score as per the Self-Efficacy criterion for the longest time.

Quick evaluation Self-Efficacy on sustainable home choices. The interviewer quick evaluation of each participant's overall Self-Efficacy on the sustainable home choices is based on the participants sustainable home choices expressed Self-Efficacy, or how they apparently judged their own ability, i.e. to feel utterly capable would be deemed the highest self-efficacy - to make these choices. Their level of Self-Efficacy was also reflected or compared to their expressed awareness and application of sustainable home choices in the 30-minute interview. The highest score of "5" corresponds to Highest Self-Efficacy and the expression of awareness and application of more than one social *and* environmental concern. A "4" to a High Self-Efficacy and the expression of awareness and application of more than one social *or* environmental concern A "3" corresponds to a Moderate Self-Efficacy *and/or* the expression of awareness and application of more than one social and environmental concern. A "2: for a low Self-Efficacy *despite* the expression of awareness and application of more than one social and/or environmental concern A "1: as Lowest Self-Efficacy and/or no concerns being expressed nor applied.

Quick evaluation on self efficacy on sustainable home choices						
Interviewe	Name	**Highest self efficacy** with the expression of awareness and application of more than one social **and** environmental concern	**High self efficacy** with the expression of awareness and application of more than one social **or** environmental concern	**Moderate self efficacy and/or** the expression of awareness and application of more than one social and/or environmental concern	**Low self efficacy despite** the expression of awareness and application of more than one social and/or environmental concern	**Lowest self efficacy and/or** no concerns being expressed nor applied (none concerned in the sample)
I1	Anna	**5**				
I2	Bryan			3		
I3	Charles	5				
I4	David		4			
I5	Eric			3		
I6	Franck	**5**				
I7	Gal	5				
I8	Henri				2	
I9	Irene				2	
I10	Josy				2	

Table 5 Scoring the Quick Evaluation on Self-Efficacy on Sustainable Home Choices

I then proceeded to re analyze each interview using Saldana's value coding based on ***Values***, the importance attributed, ***Attitudes***,"The way we think and feel about" (Saldana, 2015, p 110-115) and ***Beliefs***, a system of "values and attitudes, personal knowledge, opinions, prejudices, morals" (Saldana, 2015, p 110-115), all conducive to "rules for action" (Saldana, 2015, p 110-115) (Table 2)

5 RESULTS AND DISCUSSION

The results presented here take the form of either quotes from my interviews, or a table of results allowing me to better analyze common themes in responses and look for "relations or differences" with the Thematic Framework. As the scope of the interview was limited to 10 interviews, the term "relations" in this paper is used to reflect if potential relations could be found in the interviews between the preferred learning experience chosen by the learner and the self-efficacy and flow on the subject of sustainable home choices.

5.1 RQ1 What role have Flow and Self-Efficacy played in my interviewees' educational experience?

As proximity of result was an important component of Self-Efficacy, I noted that *felt* proximity of time was even more important and that Flow was a common component to both desired concepts of Self-Efficacy and Flow (Table 6, Column L vs J)

5.1.1 Minimal time felt and Satisfaction from Flow bring on Self-Efficacy

"A rich learning experience: Describe a learning experience - alone or with other people - when you forgot about time" (Interview Question 1)

Question 1 called for an example from their memory of experience where time was forgotten. Often, it was often referred as a life altering experience (for Bryan, Charles, David, Eric, Franck, Gaelle and Irene – 7 out of 10).

Questions 2 and 3 allowed for a quick deep dive, in a handful of minutes, into *one of*, if not *the most* satisfying learning experience of the interviewees. By that recollection, they quickly got into a most satisfying mindset from a very concrete and positive personal experience, allowing me to understand some of the reasons for their high level of satisfaction; this set a positive environment of shared common ground to continue the rest of the interview.

5.1.2 Self-Efficacy

Hereunder, in Table 6, Self-Efficacy was weighed on the participants' best learning experience. In summary, at one glance, all Self-Efficacy criteria could be found and the overall results were a rather

high Self-Efficacy, with scores of 3 or more on a maximum of 5 for columns C to F.

Results were higher when *felt* time was minimal and used for the result (column L), scored as most positive, a 5 out of 5, as compared to the weighted results using real time scores, as explained in Table 4 (column J).

	Scoring Self Efficacy on all criteria but time		Scoring Self Efficacy on real time criterion	
	5 corresponds to	Yes	5 corresponds to	Up to a few weeks
	4 corresponds to	Much	4 corresponds to	between a few weeks and 6 months
	3 corresponds to	More or less	3 corresponds to	6 months
	2 corresponds to	Little	2 corresponds to	above 6 months to a year
	1 corresponds to	No	1 corresponds to	More than a year
	Self-Efficacy weighed on the learning experience, to start a qualitative process			
	Score from 1 to 9, as per the Table above .			

A	B	C	D	E	F	G	H	I	J	K	L	M
	Names	Explicit Measurable goals	Feedback given	Mastery of the Subject	Performance - Desired level attained	Time to goals (Proximity) **Real Time**	Time to goals - Time flew- **Felt time is minimal**	Felt Level of Satisfaction	Interviewee Weighted SE on Learning Experience using **Real Time**		Interviewee Weighted SE on Learning Experience using **Felt Time**	
I1	Anna	5	5	5	5	**5**	5	5	5.00	1	5.00	1
I2	Bryan	4	5	Not Intended	5	**4**	5	5	4.60	2	4.80	3
I3	Charles	3	5	3	5	**1**	5	5	3.67	6	4.33	5
I4	David	4	5	4	5	**2**	5	5	4.17	5	4.67	4
I5	Eric	5	5	**5**	5	**1**	5	5	4.33	4	5.00	1
I6	Franck	5	5	5	5	**5**	5	5	5.00	1	5.00	1
I7	Gal	4	5	5	5	**3**	5	5	4.50	3	4.83	2
I8	Henri	5	5	5	5	**5**	5	5	5.00	1	5.00	1
I9	Irene	5	5	4	5	**2**	5	5	4.33	4	4.83	2
I10	Josy	5	5	5	5	**2**	5	5	4.50	3	5.00	1

Table 6 Self-Efficacy Results

Self-Efficacy showed a great role in the learning experience of all 10 French interviewees.

Satisfaction was expressed as the most important marker from the learners' favorite experience as per Bandura's Self-Efficacy and Csikszentmihalyi's Flow theories.

Weighing Self-Efficacy on the learning experience. After a thorough 6 steps thematic analysis using Braun's approach to gather a maximum of results linked to the theoretical framework, a weighing of the theories-linked criteria was made to score Self-Efficacy on their favorite learning experience (in column J and L from Table 6).

The Self-Efficacy-related criteria Feedback, Mastery, Performance and Satisfaction (columns D,E,F and I) emerged from specifying that time was forgotten, a criteria of *Flow* theory in Question 1.

Wealth, Sustainability and Self Efficacy on Sustainable Home Choices. Wealth-related interview questions 6 and 7 were asked to elaborate if they would express interest or knowledge beyond

financial wealth, as per Meyer's theory and to see if these similar questions on wealth would make them connect to sustainability. If Self-Efficacy was a part of Education (as understood in 3.2.2 here for Dewey, 1938, p.37) I looked if there could be a connection between wealth and sustainability bringing higher Self-Efficacy, at least in my sample.

Often, when the connection was made between Wealth and Sustainability, there was a a High Self-Efficacy on Sustainable Home Choices, as for all Anna, Charles, Franck and Gal. Opposed to this, Self-Efficacy on Sustainable Home Choices was low when wealth was not *clearly* connected to sustainable homes, as for Bryan and Eric, who scored a "3" on Self Efficacy on Sustainable Home Choices (Table 7). Also, when Sustainability was judged vague or unfamiliar, and so, not easily relatable to wealth or *any* another concept, Self-Efficacy on Sustainable Home Choices was low, as for Henri and Irene.

Josy scored a "2" from a very low Self-Efficacy on Sustainable Home Choices – not only she expressed a disconnect between her knowledge of sustainability and her self-judged non-knowledge of how to build wealth "I know nothing about that. It's a catastrophe" – but because most of the time, when positive sustainable impact resulted, it had nothing to do with her choices, as with the positive impact of the city choices for example. She had not looked the information before making her home choices and judged the positive actions as having happened "by chance".

Sometimes interviewees expressed many social and environmental concerns but *felt* unable to apply them although they clearly did act on them: Henri and Irene had the particularity of expressing more than one social environmental concerns and applying them BUT both had a very low Self-Efficacy. They are both scored a "2" both saying "I don't know" to sustainable house questions when in fact they *had* expressed and applied many social and environmental concerns!

Self-Efficacy results on learning experience compared to Quick Evaluation on Self-Efficacy on Sustainable Home choices. To look for any trend or gap that could emerge (column entitled "looking for relations", in P) percentages closest to 100% meant closest results between Self-Efficacies on the learning experience and sustainable home choices (Table 7). The lowest relations – calculated by dividing the Self Efficacy on Sustainable Choices by the Self-Efficacy on the Learning experience - were for Henry, Irene and Josy with most of the percentage results in the lower forties. Henry, Irene and Josy *felt* unable to act on Sustainable Home Choices, as expressed in their answers:

"no idea" (Henry) "don't know" (Henry, Irene and Josy)

Relations were wide apart for Charles (136 to 115%) probably due to the choice of learning experience; more of a life experience (being a father) over a long period of time (20 years) and with much modesty as per the goals and mastery attained of trying to be a good father, as compared to sustainable home choices, which were very clear and comfortable to assume to him.

As per relations less than 75% or lower self-efficacy scores on sustainable home choices as compared to their favorite learning experience, one could attribute the result for Bryan, to more of an unscripted personal experience (no Mastery intended) than a learning one, and as to a range of different and non-exhaustive reasons for Eric, Henry, Irene and Josy. These relations results could be considered leads but not necessarily conclusive ones for the sole fact that many unseen reasons could affect the result.

	Scoring Self Efficacy on all criteria but time 5 corresponds to Yes 4 corresponds to Much 3 corresponds to More or less 2 corresponds to Little 1 corresponds to No				Scoring Self Efficacy on real time criterion 5 corresponds to Up to a few weeks 4 corresponds to between a few weeks and 6 months 3 corresponds to 6 months 2 corresponds to above 6 months to a year 1 corresponds to More than a year							Based on the given answers during the interview			
	Self-Efficacy weighed on the learning experience, to start a qualitative process **Score from 1 to 9, as per the Table above .**														
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Names	Explicit Measurable goals	Feedback given	Mastery of the Subject	Performance - Desired level attained	Time to goals (Proximity) **Real Time**	Time to goals - Time flew- **Felt time is minimal**	Felt Level of Satisfaction	Interviewee Weighted SE on Learning Experience using **Real Time**		Interviewee Weighted SE on Learning Experience using **Felt Time**		Interviewer quick evaluation of Interviewee's Self Efficacy on Sustainable Home Choices		Looking for relations or differences N/J **Real Time**	Looking for relations or differences N/L **Felt Time**
I1	Anna	5	5	5	5	**5**	5	5	5.00	1	5.00	1	5.00		**100%**	**100%**
I2	Bryan	4	5	Not Intended	5	**4**	5	5	4.60	2	4.80	3	3.00		65%	63%
I3	Charles	3	5	3	5	**1**	5	5	3.67	6	4.33	5	5.00		**136%**	**115%**
I4	David	4	5	4	5	**2**	5	5	4.17	5	4.67	4	4.00		96%	86%
I5	Eric	5	5	**5**	5	**1**	5	5	4.33	4	5.00	1	3.00		69%	60%
I6	Franck	5	5	5	5	**5**	5	5	5.00	1	5.00	1	5.00		**100%**	**100%**
I7	Gal	4	5	5	5	**3**	5	5	4.50	3	4.83	2	5.00		**111%**	**103%**
I8	Henri	5	5	5	5	**5**	5	5	5.00	1	5.00	1	2.00		40%	40%
I9	Irene	5	5	4	5	**2**	5	5	4.33	4	4.83	2	2.00		46%	41%
I10	Josy	5	5	5	5	**2**	5	5	4.50	3	5.00	1	2.00		44%	40%

Table 7 Looking for relations between different Self Efficacies

Weighing Self-Efficacy on Sustainable Home Choices. From questions 4 to 11 and sometimes even from questions 1 to 3 on their learning experience (Anna and Gal), the feeling of ability to tackle sustainability when it came to home choices, in other words their Self-Efficacy on sustainable home choices (column J) did not necessarily relate to their actual expressed awareness and application of the concerns and application in their actions, as shown in column N from Table 7 (Looking for relations between different Self Efficacies), for Henri and Irene, in particular, but also, Josy.

This weighted average of Self-Efficacy from columns J, L and N of Table 6 and 7, based on criteria

from Bandura's 1981 study and Csikszentmihalyi's 1990 Flow was tested here by looking for relevant answers, relations and differences between the learning experience and the sustainable home choices. The test was meant to start a quality process to see if relevant answers and differences in results between the two Self-Efficacies results could start to bring interesting results or if the data itself could be refined over time in order to obtain the best possible outcome for Self-Efficacy on sustainable home choices - with the information from an earlier positive learning experience.

On the results on Self-Efficacy regarding Sustainable House Choices, for questions 7 to 11, there was a lower sense of Self-Efficacy (a score of 2 or 3 on 5) for 5 interviewees out of 10 (Bryan, Eric, Henri, Irene, Josy).

Self-Efficacy means Time flies. If the question asked for an experience where time flew, the answers actually often presented long or very long experiences, confirming that education is a "continuum" (Dewey) but not necessarily confirming that proximity gives a sense of satisfaction nor Self-Efficacy for my respondents, at least. I would suggest that maybe the *feeling* of the proximity of the goal might be more important than the actual real proximity. Take the example of Charles 20 years father's experience which, according to him, went "so fast" and of the training of David, Eric, Gal, Irene and Josy all from 6 months to several years. This was expressed by Gal as follows:

> *"The internship lasted six months. I didn't notice the time. It was wonderful. I discovered that slow tourism existed, that respect for nature also means its maintenance, that in ecosystems, the main thing was not to be to the extreme, it was really to respect a certain balance".(Gal)*

5.1.3 Satisfaction

Self-Efficacy and Satisfaction. As satisfaction was an important marker for Self-Efficacy - particularly developed here in 3.2.2 - , I made sure to start the interview questions inviting for a satisfying experience and noted all related criteria when the respondents had a positive satisfaction inducive to a higher level of Self-Efficacy.

Satisfaction from Feedbacks

Satisfaction was brought from the feedbacks. These were from people but also from the activity itself, from the result of it, from a physical sensation in a manual activity. The learning experience very often included feedback on their achievements: in 8 times out of 10 interviews**.** A couple of the comments

demonstrating this can be found below:

" it is necessary when we create links with people who really tell us that we stand out from the competition. Personally, it means a significant satisfaction" (Eric)

"the satisfaction behind it is… it's the work done.. the compliments on the result. And then the reward for me, namely..the organic feeling, the organic relationship to wood […] a very, very high rate of satisfaction behind it." (Franck)

Satisfaction from knowledge acquired, from life marking experiences with others

Satisfaction earned in the learning experiences often related to a combination of place and connecting to other people's life and the world to a certain degree, whether through a physical activity with a coach, a manual skill with a Master, cultural discovery with other nationals, parenthood. Almost all requiring a place for it to happen and a level of physicality, 9 out of 10, but for Anna, whose learning experience was in full autonomy, alone. Her house building experience did not qualify as an example to Question 1 as she rarely forgot about time during that one, quite the contrary.

5.1.4 Flow

Hereunder, Table 8 weighs Flow on the participants' best learning experience. Columns C to K list the 9 Flow criteria from Figure 2 in 3.2.3. Scores are given with a maximum 5 and a minimum 1. 5 means Yes, 4 means Much, 3 means More or Less, 2 means Little, 1 means No. The weighted Flow on learning experience is obtained by adding the 9 scores and dividing the result by 9. The same weighed results on the Self-Efficacy from sustainable home choices from the method explained in 4.4 are compared to see if there could be relations or differences.

									Scoring Flow on all criteria				Based on the given answers during the interview	
									5 corresponds to Yes					
									4 corresponds to Much					
									3 corresponds to More or less					
									2 corresponds to Little					
									1 corresponds to No					
		Flow weighed on the learning experience, to start a qualitative process												
		Score from 1 to 9, as per the Table above .												
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Name	Autotelic Experience	Concentration is Deep	Control is Possible	Explicit Goals	Feedback Immediate	Problems are forgotten	Self Consciousness Disappears	Sense of Time is altered	Skills match Challenge	Interviewee Weighted Flow on Learning Experience		Interviewer quick evaluation of Interviewee's Self Efficacy on Sustainable Home Choices	Looking for relations or differences N/L
I1	Anna	5	5	5	5	5	5	4	5	5	4.89	2	5.00	102%
I2	Bryan	5	1	2	4	4	2	2	3	5	3.11	8	3.00	96%
I3	Charles	5	3	3	3	3	2	2	**5**	4	3.33	7	5.00	**150%**
I4	David	5	4	4	4	4	2	2	4	4	3.67	6	4.00	109%
I5	Eric	1	5	5	5	4	2	3	4	5	3.78	5	3.00	79%
I6	Franck	5	5	5	5	5	5	4	5	**5**	4.89	2	5.00	102%
I7	Gal	5	4	4	4	3	2	4	4	5	3.89	4	5.00	**129%**
I8	Henri	5	5	5	5	5	5	5	5	5	5.00	1	2.00	40%
I9	Irene	5	5	5	5	5	4	4	4	5	4.67	3	2.00	43%
I10	Josy	5	5	5	5	5	4	4	4	5	4.67	3	2.00	43%

Table 8 Flow Results on the Learning Experience

Flow showed a great role in the learning experience of the 10 French interviewees.

For this sample, designing a training in the subject of Sustainable Home choices with possible control, explicit goals, feedback obtaining a high Flow score, would, with similar relations, show positive impact on Self-Efficacy for sharing similar goals: explicit and measurable goals, feedback, mastery of the subject, performance.

Bryan's cultural holiday – a 10 day trip to Cap Verde in a package tour with other foreign participants and a local framework of care, special services and proposed daily activities - did not really apply to the Mastery of that subject – the local culture – as in living/working the daily life of locals and sharing their home. The intention number one was a holiday where efficacy and Self-Efficacy was deliberately relegated to the travel organization for the most part. I could not score highly the sense of control of his experience (for Flow) or forgetting one's problems and not being self-conscious as he would often compare his life with the life of the people he visited.

Another definitely lower Flow score was Charles which did not divulge nor expressed that he could really control his 20-year-old experience as a father, or that its goals were explicit – it was more of a ride which went so fast. The feedback was not necessarily immediate, or his own problems forgotten. A higher score was that his self-consciousness disappeared in that he mentioned he learned abnegation. His feeling of the experience was highly positive. The sense of time alteration was exceptional, as 20 years is for any learning experience.

David (I4) had a relatively lower score on control, as his expectation was high in desiring a culture shock but not specific just because it had to be a surprise. His problems were not forgotten. He was still self-conscious.

Eric (I5) sense of Flow was not the highest and though his experience was positive, he had very different scores: highest on control, goals, definition feedback, but quite low regarding forgetting his own problems, low self-consciousness and altered sense of time. His activity, though enjoyable in many ways through people's interactions was not autotelic because either tiring or unpleasantly stressful – and would not have been pursued without serious financial compensation.

Another lower Flow score was Gal's (I7) due to her lack of control of her extended internship situation, with poor explicit goals and poor or negative feedback. Rather excluded from her peers at first, she did feel quite self-conscious all through her experience and reflected often about herself and her personal aspirations - not necessarily related to the mission but one might argue the contrary as her final conclusion of the experience was that she integrated a holistic perspective and a thirst for balance in everything she pursued afterwards. Hence hers was truly a life changing experience and for the positive. Her Flow score might have been the highest in her own life of educational experiences.

In Table 8, the first and third highest scores (on eight different scores in column L) on Flow from my sample (Henry, Irene and Josy) were also the lowest scores on Self-Efficacy on Sustainable Home choices (in column N), because in their learning experience they had a knowledge and assurance that wasn't owned for sustainable house or from how to link a wealth system to sustainability.

5.2 RQ2 What do people find important about a house? And how can we position sustainable house acquisition within ESD?

People found many different aspects of houses important. An eye opener were the 4 pre-interviews with Finnish students, or their spouses and one professor from my cohort (L, J, H, and A): Location, or Place and Life Projects were important: 3 out of 4 wished for no driving or a close location in regards to services. In France both categories were less expressed as a convenience or a sustainability criterion where car use would ideally be minimized. It was not a reality for Anna, whose home still counted several cars though she knew better, and more of a financial criterion to ensure price stability for Jessy, David, Eric, and a practicality for Bryan (wishing minimal distance to the market or the baker) even if translatable to a sustainable choice. Both place and life projects categories were clearly expressed as

merging together by Franck:

> *"The home is a.. the ideal in a house is a place where everyone will have their place and where there will be a place for everyone together + where the organization also merges into the installation project and the life project*." (Franck)

Hence upon further review of the French answers, three categories emerged. The first two were **the Place and the Life Project**, (as in Buchanan) and calling for the important values behind; and the third category was the combination of these first two quite foundational categories with the addition of more specific or personal aspects, resulting in **the Ideal Home**. One such important specific aspect added to exemplify the Ideal Home was around the idea of sharing. I did not necessarily find sharing as an aspect declined at the specific level of a house in my theoretical framework but it was definitely an important factor, presented at a higher, more macro level – as in with Raworth's social model (Figure 4) and a fairer taxation system (Dixson- Declève, 2022, p.146-147). Sharing played an important role with 3 of the Top respondents with the highest Self-Efficacy on Sustainable Home choices: Charles, Franck and Gal.

5.2.1 Place

Place means close to services and work. Most (90%) wanted a certain level of peace and quiet or privacy, but to be close to services: (I1, I3, I6, I8, I9, I10) and close to work (I2, I3, I4, I5, I10)

Place, Mobility and House Tenure, The uncalled inclusion in the answers of the notion of temporality concerning house tenure (how long a home lasts) was noted. Respondents could/will/have moved from their home after just a few years: 2 out of 4 in Finland: H and J. 2 out of 10 in France: I2 and I4. As this subject may increase in importance, a note was made for further research.

5.2.2 Life Project: People and Sustainability

Sustainability findings In France, the respondents answered the following on Sustainability quite differently. Sometimes they needed a complement of information, or help on their Self-Efficacy. Sometimes only energy came up as an answer. Ecology could be seen as a problematic alternative:

Sometimes **sharing** came up, with a project to live in a community for example, or preferring to focus on the locals for most needs and interactions as for Charles below and Franck (intro to 5.2).

> "*we would put the light habitat there around and the house would be the common place to welcome and transform. Because that's also the idea of making ... making cider, apple juice, preserves and*

having this common place for transformations" (Charles)

Sustainability and Resource Management. 100% of the respondents expressed a concern related to resource management only in many different ways: environmentally or climate friendliness (I1,I3, I4,I7), construction costs (I2), energy spending (I5,I6,I8,I10), water use (I9), waste management (I10).

A Sustainable Home is Sharing. Respondents with a high score on sustainable home choices all expressed the importance of sharing in their home, with their family, or friends. In different degrees so did all of the other respondents.

Sustainable House Potential: Not just money, people. How can the home evolve is a real question needing answers. How it impacts society is often left unremarked. For example, when outside help is needed and local help would be welcomed (Franck). How a house integrates to the social fabric around it has importance, how the resources used to build it, or the energy stored or produced by it or to make it function impact the people close to it or far from it, it can be its beauty, etc. Franck proposed a measured approach to the impact of a house on society:

"*To determine the impact, the criteria must be determined."* (Franck)

Sustainable Homes are inspiring: A welcoming space, open to evolving too. Sometimes, they didn't necessarily want something very comfortable but something warm, welcoming friends (Bryan) and family (Anna, Franck, Charles) a home which could inspire them from its surrounding or inner aesthetics or one which meant different future opportunities (Charles, Franck and Gal). Here are some examples of home as inspiration: …

"It's true that I prefer trees and a meadow to a coal factory. (Charles)

"There was the freedom to evolve" (in their home) (Franck)

Positive impact on people was a big sustainability criterion for Anna, Charles, Franck, Henri and Irene. They were quite assured that the financial value would be a consequence of the sustainable choices and not particularly concerned if it weren't, actually, as their priorities (community, sharing, family oriented, extended caring) would have been covered.

Sustainability and Money: The Big Picture. Budgeting beyond the price tag of home acquisition often came up, as per future home cost planning (I10), overheads (I9), validity of the home as an

investment, renting vs ownership calculation (I2). Not helped when they bought, Henry opened on the lack of visibility on future costs upon buying:

> "*this is very stressful for both of us", "we still have work that is not finished after almost 10 years*" (Henri)

Naturally, if energy spending was at the time of the interview (2023) very present, the different demands to face this issue were not addressed at the time of buying; and neither were other sustainability related issues such as the future cost of materials, water or alternative energy potential.

Sustainability and Systemic thinking. Sometimes they demonstrated an interesting level of knowledge to build on, for example illustrating embeddedness of systems came up (Raworth, Fullerton, the researchers from Earth for All). Systemic thinking was demonstrated in the answers related to the sustainable house from 50% of the respondents (I1, I3, I6, I7, I8)

> " *interesting in ecology and the environment is the dynamics of the place where you buy"* (Franck)

> "*Sustainability, I combine it with the well-being of human beings" and "the sustainable house is a house that will not destroy the environment around it and rather participate in its construction."* (Gal)

5.2.3 Ideal Home

As elusive as anything ideal may be, here were aspects, personal or specific which completed the idea of the ideal home for the respondents to make the ideal home. Starting from these findings to work towards a sustainable home choice could be a way to personalize the training design where these aspects could steer the decisions on the most potentially impactful sustainable choices available, making sure to include them in the decision process.

Ideal Home and Balance. Respondents on Sustainable Housing 60% expressed different viewpoints around the idea of balance: between energy spending and esthetics (I1), towards social equity (I2), between ecosystems (I6), sharing space and work benefits (I3), or a combination of the latter (I6, I7). Yet, when not expressed regarding the sustainable house questions, one could pull from other expressed sustainability criteria which would have worked on their home choices (Resource Management, Relationships). Other sustainability criteria would be expressed as from

Anna on resilience by multifunctionality:

"*functionality is important and aesthetics too: sun, light, warmth*" (Anna)

Gal, equal to her life learning's would show as much interest in her sustainable choices as her financial ones, again reflecting her detailed attention to balance. Closest to the ideas of the XXIrst century economists she reflected her life choices in her home choices.

Charles relation to location would be the most holistic for combining a wish for connectedness to Nature, a reasonable distance to amenities, ideally no more than a short bike ride, and the essential role of the minimal distance within the mindfully planned shared space to be co-thought and built with the other families in their common real estate project.

Ideal Home and Long-Term Benefits. A marker for sustainability, thinking of benefits long term does not reflect global views on the advantage of itemizing everything, from financial costs to time, which clearly made the financial and insurance sector rich but also the governments, and now pervasively all sectors of our economy via a multitude of mini costs reaping a maximum of profits and power but with a very short term view. This conflicts with our very real nurturing system, which evolved over 4.5 billion years old. Our prevalent modern, resource-hungry system is disconnected from the bigger picture of the time required for natural forest growth, still water replenishment, fauna and plants habitats building, not to mention the time needed for the beauty of it all. Still, at our human scale, even though we move, homes remain a primary need and are part of that more respectful and more durable bigger picture. Being able to balance long term benefits is definitely in the mind of the respondents. Voiced for 60% of them about homes (I1, I3, I4, I6,I7,I9) it still was not as clearly expressed when asked the *sustainable* home questions.

Ideal and Sustainable Homes in Finland. In Finland on sustainability, I was surprised to hear from an interviewee that they did not worry about sustainability because "our government takes care of it" (Finnish Interviewee 1). Such trust in the Finnish government and consequently such relief for this Finnish citizen! Also, from the point of view of Self-Efficacy, there is less of an issue of avoiding a fear which does not exist. The level of satisfaction is easier to obtain which increases the feeling of Self-Efficacy and the level of satisfaction.

Values attached to Place evoked by Buchanan and his mentor philosophers (Confucius,

Heidegger) (Buchanan, 2019) can thrive and citizens can more easily find or work on their usefulness in their favorite place: home.

Ideal Home and Self-Efficacy on Sustainable Home Choices. The findings on the sample were quite shared:

High Self-Efficacy on Sustainable Homes was demonstrated with I3, I4, I6, I7, and I10 definite knowledge of local social and environmental solutions, also demonstrating long-sightedness and/or a desire to understand how to anticipate, adapt, evolve with their home.

Low Self-Efficacy in Sustainable Home Choices was equally expressed for I2, I5, I8, I9 who gave answers ranging from "*only Energy comes to mind*" (I5) to "*No idea*" (I8). Yet the same four respondents demonstrated actual knowledge of energy but also of sustainable materials, insulation, renewable energy, and photovoltaic panels!

Anna expressed low satisfaction in her experience as a sustainability-focused home builder, surely impacting her Self-Efficacy on sustainable home choices. Her questions could be resumed in a philosophical manner: She always could have made better choices but was satisfied to have given her very best together with all the pertinent people she gathered around the project. Though aided by a Master Architect, maybe the lack of adequate feedback (Bandura, Csikszentmihalyi) could have made her feel a low Self-Efficacy. Of course this was unrelated to her actual achievement.

5.3 RQ3 How does one keep, or increase the value of a house?

The term "value" here was intentionally left open to interpretation to collect the understanding of it, be it financial or otherwise. The answers given were related to financial value, but also deeper values, sentiments, relationships and experiences

In fact, I did not answer as per what *value* nor specific *wealth* I was referring to in my questions to let my respondents answer with their preferred understanding of these, some chose financial value as for Anna (I1) but also family or sentimental value as for Anna and Franck, which in this case answered Meyer's question – that there *was* more to sustainability than thriftiness from this sample. This resonated with Buchanan point of view of values necessarily attached to place; Anna strived to do their best on sustainability still placing family as the highest value of all values:

"priority of priorities!" (Anna).

Wealth understood as mostly financial value. Several respondents answered that the value of a house, in terms of financial wealth was related to the market but assured more control when more sustainability goals where met: friendly or little transport, family to community aspirations, punctual to refined resource management. The diversity of the answers for sustainability reflected the personal aspirations of the respondents (close to nature or urban, career oriented or community oriented) and often when Self-Efficacy on Sustainable Home Choices was low or their actual efficacy to point at more than the obvious energy focus, answering Q3 proved more difficult because the link to the sustainable house they could understand very well was just not there (true for Bryan, Eric, Henri, Irene and Josy). The following statements illustrate mostly a financial perspective: value as market price or cost.

"(Have) a crush but with a limited budget (laughs). Because sometimes you can have a crush but the budget is not necessarily there." (Bryan)

"The house I have today, to ensure that it keeps its value, simply maintain it" (Charles)

The wealth potential of a house was expressed as Past, Present and Future, or a foundation, a state and a potential. For Franck, who wished for a memo on passed works and potential evolutions, it meant financial wealth but also could include the potential to evolve in the other types of wealth he was interested in as listed hereafter.

Wealth understood as deeper values and sentiments. Wealth was understood as bigger than the sum of the parts, either unconsciously open to systems thinking (Raworth, Fullerton, *Earth for All* researchers) or clearly beyond the mere financial aspect of wealth. The use of the term heritage below, instead of a more financial term, is to describe family values, a prize to care for, responsibilities to it, and many emotions more important that market price or cost.

"This heritage will be maintained; it will be repaired". "The value, it is above all sentimental"(*Franck)*

Wealth understood as relationships. In several cases, relationships were more valued than resources (I1, I2, I3, I4, I6, I8, I9). This links to ESD in many ways: From our three ESD literary choices, the fact that wealth is definitely not just financial can redirect the design towards non-financial criteria related to found values, attitudes and beliefs found in the interviews. These criteria could impact their financial

wealth or future costs and/or provide Self-Efficacy for fitting the objectives of the experts in the field of sustainability. By extension these criteria could have a positive impact on sustainable house decisions such as environmentally friendly resource management, community sharing. A better understanding of the taxation system and its likely evolutions could be brought into the design discussions as it would impact the budgeting costs interests expressed one way or another by 90% of the respondents in my sample.

Referring back to the quote by Amartya Sen in the literature review who stated that any development should advance "the richness of human life, rather than the richness of the economy in which human beings live" (cited in Raworth, 2017, p.43), and this seems to be an area in which most people do not yet make the connections between their house and the larger interconnected world.

Wealth is experiential. Wealth seen holistically includes people's experiences. This is an important aspect of Dewey 1938 approach to education, but also of Bandura's and Csikszentmihalyi's works, from respectively 1977 and 1990, for linking the outer experience to the inner experience, for appreciating the level of satisfaction. Gaiety and beauty were important as Charles depicts below. "What's important in a house" brought interesting answers like his:

> *"a warm feeling, maybe gaiety. Not necessarily comfortable (large living rooms...no). A little place. Warm and inspiring." (Charles)*

If these feeling constitute positive elements for the individual's experience and so the individual's wealth, their choices could be inspired by the openness to the outside (which was actually noted as having a view was important) and how gaiety could be achieved. In their case they stopped the interview to make me listen to birds chirping as the definition of what she wanted: gaiety from Nature's other dwellers and a connection to its sweet surprises and beauty. French Architect François Allard once mentioned to me the importance of focal points in architecture where a window, real or constructed from a created point of focus in the environment, like a frame in the garden towards an interesting sight, could add to the positiveness of the place's experience.

5.4 RQ4 How can I encourage sustainable housing Self-Efficacy in my design?

Given that my overall objective is to have the highest satisfaction level from the learning experience, I can take note *when* and most importantly *how* the criteria for Self-Efficacy were highest in the prior

learning experience of my learners.

On Self-Efficacy on Sustainable Home Choices, I scored Anna, Charles, Franck and Gal with a 5. Besides Charles, who had a low score of Self-Efficacy on his learning experience, all these had top Self-Efficacy scores on their learning experience. 30% of my respondents showed a strong relation between Self-Efficacy in a learning experience and my quick evaluation score of Self-Efficacy in sustainable home choices.

My design would make sure to gather at least as good of a score in all the criteria. A quick opinion poll and an anonymous survey could be proposed to evaluate the learners' experience.

Half of the interviewees clearly already had a high level of Self-Efficacy related to learning, but the other half had a low level, so by presenting the relationship between behavior and Self-Efficacy to the learners and giving them keys and feedback – from me and the Group, ideally - to measure their progress towards Self-Efficacy; keys such as impactful aspects of a sustainable home – to help them tackle the subject more easily and concretely -, measurable and attainable goals.

The feeling of time passing quickly is quite personal and the answers to the first question would help define this. If the real time of the example given is short, I would suggest to take it as a measure of the maximum potential time to plan or as a measure of maximum time per quite different sub programs. If the time given were quite superior in the example given to the maximum time allowed for the training, I would focus on the other criteria: the goals, the steps to their achievements and the best format of feedback (mine, the group, a mentor, one particular class mate).

The feeling of high Self-Efficacy in learning didn't always translate to my quick evaluation of sustainable home choices where several participants felt their knowledge was too low to do this successfully. I would co-build a series of clear, incremental and constructive positive steps, with feedback, towards their goal of finding the ideal home - and in this process show them, or lead them into activities and goals that would encourage Self-Efficacy. When my quick evaluation of their Self-Efficacy on sustainable home choices would be low, meaning lower than evaluation of the reality of their knowledge, and lower than their best learning experience, I would start by reassuring them of their knowledge (anticipating on their future progress or reacting on their actual progress – hence giving a strong positive feedback) by designing a program starting with their knowledge foundations as a common ground and linking it, working from it to the bigger picture or to eventual knowledge additions (Constructivism).

A pilot project could be proposed where Self-Efficacy and Flow criteria could be applied to sustainable house acquisition, and the new weighted average could be calculated to determine if indeed Self-Efficacy or Flow criteria could find relations, with the aspects found in 5.2, the Place, the Life Project, The Ideal Home (this one would clearly include sustainability).

Additional aspects to the Place, the Life Project and the Ideal Home could be added incrementally to see if results vary. For example, rewards for performance deemed of quality also tend to increase interest (Bandura, 1981, p.587) In their achievement of crafting a floor joint gathering strength and beauty (for Franck) and of opening and mastering all the steps of repairing a lock (for Henry) both interviewees Franck and Henry experienced great satisfaction from the feedback given but also from the quality of their work. This was reflected in their positive sense of Self-Efficacy of their learning experience.

5.5 Additional findings: Relationships (People matter). Sharing

When it comes to having had an important lasting learning experience, often, people are in the picture: people close to us or just people we share time with but with whom we had a communion of sorts. It could be a close collaboration with an expert, or with people from the discovered environment or experience. This was expressed by 80% of the respondents. A couple of examples are provided below.

"I think we all have a role to play" (I2)

"where the idea of sharing, in fact, is at the center of the choice as well". "not sharing habitat, but .. like a workshop". and "the common place to welcome and transform"(I3)

"Sharing things together is .. a very strong feeling" (I4)

On the impact of your house on the environment on society, one respondent said that:

"To determine the impact, the criteria must be determined. Being local is something that's important" (I6)

6 CONCLUDING REMARKS

My initial idea was to clarify how home buyers connected homes, for most the biggest component of their wealth, to satisfaction and sustainability. This was to serve as a basis for my Educational Program on the subject. I wanted to test qualitative interviews inspired by the interviewees' sense of Self-Efficacy and Flow from their experience. With the potential for self-development of Self-Efficacy, I looked in literature to combine the positive feeling of ability with satisfaction in learning to hopefully result in positive action. One of the most important criteria in the training design is to ensure a feeling of proximity, in particular with the time necessary to achieve the goal or its subgoals. Another criterion in the training design was Mastering the activity which has to include clarified expectations, goals, proper feedback and the attainment of these goals.

Self-Motivation into the Program is the ultimate goal of the Program Design and the chewable bits of simplified apps pervading our lives are an obvious demonstration of this. A Program on Sustainable Home Choices would be no different: divided in parts themselves defined by the values, attitudes and beliefs of the learner, at least to initiate sessions on that common ground, build on Self-Efficacy by eventually uncovering knowledge and experiences from the learner to validate the Program, such as their family and community values, their specific list of interests to link with actual sustainable home choices and expand from there by proposing an easy to follow structure at the learner's pace. And so doing, focus on keeping the characteristics of Flow into the Program to always keep in mind the markers of satisfaction (Csikszentmihalyi, 1990 and 2014).

In the following, the findings explained in the previous chapter are first reflected against the literature in the literature review from the viewpoint of the research questions in the thesis. Sustainable house acquisition is positioned as per Education on Sustainable Development. Principles of training are crafted for each interviewee. The Program Designer use his finding to make a draft of his Program and proposes a modern answer on maximizing the value of a house. Finally, the Program Designer proposes how to encourage sustainable house Self-Efficacy in his training design.

6.1 RQ1 What role have Flow and Self-Efficacy played in my interviewees' educational experience?

Minimal time felt and Satisfaction from Flow bring on Self-Efficacy As seen in the results, the 7 out of 10 experiences where time was forgotten, a criterion of Flow, referred to a life altering experience,

meaning having changed their point of view of belief system, (as defined by Saldana, 2021). The design of a training Program about Sustainable Home Choices where time would be forgotten - but not the activity of course - would definitely be a goal to reach. A sustainable choice could be connected and valued with the added value of positive impact to wealth, given no resistance to linking money to a virtuous act, as this could be seen negatively in certain cultures.

Wealth, Sustainability, Self-Efficacy and Flow are discussed next, and the results are compared with the literature.

Bandura - Self-Efficacy and Mastery. Mastery is fundamental for positive change" (Bandura, 1977, p.191). This Self-Efficacy criteria proved true for most or 9 out of 10 respondents (and note that I2 just shared no relatable mastery objective for his chosen experience).

Self-Efficacy is "developed through modeling "(Bandura, 1977, p.191). The closeness and activity near masters allowed for that positive change too, for I7, I8, I9 and I10.

Meyer. To draw notes on Meyer's question of whether capitalism and its values dominate every act behind sustainable action, there was surely a link with sustainable action when sustainability and wealth were connected in the participant's mind. But it was not the only reason as for Josy who just seemed to not be able to enact her knowledge (be it her mastery of the building management or City politics).

Money, Culture and Sustainability. Another space for sustainability to thrive would be where the culture, in France still largely influenced by Catholicism, divides the world of money from the world of virtue. Attaching a financial value to a sustainable activity may very well exclude many who were brought up to disregard financial matters as to be void of morals, virtue and by extension if they attach these to sustainability, to that sustainable activity. This could answer part of Meyer's question in that on the contrary, a financial value to a sustainable activity may be a barrier for positive behavior. Program designers may want to integrate to care for cultural differences on the subject of money valuation when it comes to the sustainable house. Two interviewees were good examples of this: Anna and Josy were particularly sensitive as to avoid any expressed interest in money matters.

Self-Efficacy and Flow played a great role in my interviewees favorite learning experiences. I knew I had a strong foundation with most of the criteria of both theories to express the inner world of my

respondents - which would be a great base from which to think of my Program design.

The Self-Efficacy tables 6 and 7 from my sample reflected values, attitudes and beliefs and the potential propensity to action as Saldana value coding helped me to assess (Saldana, 2021).

Flow table 8 obtains more differences in the individual scores of the criteria and helps define the satisfaction part of the learning design to build for this sample.

Though Mastery of the subject was important, Feedback and Performing as desired, were paramount.

Closely related, goals had to be explicit and measurable. With time felt as minimal, satisfaction seemed more like a byproduct of the other criteria than an isolated one, but even my small sample did provide me with a few important features which seemed to define satisfaction: connecting with people, and not always clearly expressed but often felt when knowledge, feedback, goal definition or challenge were imprecise or lacking, a sense of balance which in this case was between the learners' expectations and their actual experience.

The literature I found was by all means instructive for its isolated content and information on the benefits of each concept: Self-Efficacy, but also learning satisfaction, feeling able to face sustainability issues, and the sustainable home. Trying to put it all together made me realize the bridges between the findings of education, Self-Efficacy, and Flow, and I do have a better feeling for Self-Efficacy myself when it comes to being able to propose empowering personalized programs. An example is the proximity of goals, where the *feeling* of time makes this criterion relative (and all the more interesting).

Flow inspired question one made the participants quickly recollect their most satisfying mindset and gave us a shared positive environment to continue the rest of the interviews with many cues on the participants important and positive learning experiences, thanks after the interview to Saldana's value coding method (Saldana, 2021).

6.2 RQ2 What do people find important about a house? And how can we position sustainable house acquisition within ESD?

Dewey's proposition to include the student's vision is still very valid when it comes to position sustainable house acquisition in education on sustainable development. To ensure a continuity of experiences and integrate physical, intellectual and moral growth (Dewey, 1938), homes have to represent individual values (Buchanan, 2019).

The findings on the Place and Life Project resonate with Buchanan's Proximate Ethics: the" connection to a place", the polis, what surrounds it, be it the neighborhood or the city, its values, how dynamic all these elements are (Buchanan, 2019, p.91-98) and how your home will protect, enable or encourage your wiser choices.

If experiencing Mastery is fundamental for positive change (Bandura, 1977,p.91), the goal has to at least feel proximate to increase Self-Satisfaction, Self-Motivation and Self-Efficacy.

In the case of the overwhelming concept of Sustainability, the feeling of inability to cope should be avoided. The Program Designers would have to make sure to create chewable challenges. Within its sub goal of a Program on Sustainable Home Choices, they would carve different and attainable subgoals (Schunk, 1968) with each different chapters accessible and adapted to the audience and allowing to stay motivated (Lonka, 2012).

Taking from the new economists such as Raworth, concepts appearing from this research would need to be integrated in my design as they were expressed in the literature as being of importance to complete the limited view of financial wealth: Resource Management is the most obvious one to extend the face value of the house price to budgeting future costs, but also interdependency or the importance of the neighbors, the Property Management, the neighborhood and locality, the tax system how social equity is made concrete in the access to property around the place or the inclusiveness of the system the owners will be a part of. This means embracing system complexity but also personalizing it to the learners needs, context but also inner world as proposed by Dewey and Lonka.

6.2.1 Individually designed principles for training the interviewees

Saldana's coding can help me use Armstrong's Development's Cycle (Armstrong, 2018, Figure 1 above) to better define the background of, and design for the participants, namely, here are proposition examples for each:

Anna: Better her Self-Efficacy on Sustainable House Choices by pointing out her (often good) choices on being "Glocal" meaning demonstrating that most her choices stemmed from sustainable systemic thinking and also from particular local opportunities and context.

Bryan: As his identity is strongly correlated with modernity and financial success, provide a roadmap where his sustainable home choices, starting with his interest in better material, will have more than a positive financial impact. Take this as a springboard to systemic thinking and long term benefits, including non-financial ones and connect sustainability to wealth creation.

Charles: Relations, Sharing, Harmony and Beauty are to be included in the design of participating of discovering interesting co-created space experiences.

David: Relationships play an important role. Inclusiveness and Collective Efficacy are to be integrated in his program to better Self-Efficacy on sustainable house choices and connect sustainability and wealth.

Eric: Relationships are important and so are Long Term Benefits. Connect Self-Efficacy on sustainable house choices and connecting sustainability and wealth, or maybe financial safety.

Franck: Help his project to include Space sharing, Overall Balance and being Glocal (Thinking global acting local)

Gal: Help her project to include Balance between Nature and Society, and very concretely start by helping her on attractive sustainable short-term rentals of her place.

Henri: Though naturally versed towards sustainable house choices, help him experience (much) more Self-Efficacy, valuing his social impact by proposing to share his knowledge and experience with neighbors.

Irene: Though very aware and active herself on budgeting future costs, help her experience more

Self-Efficacy on sustainable house choices, connecting sustainability and wealth, valuing her social impact too.

Josy: Providing a road map on Budgeting future costs, integrating a script on neighborhood discovery and ensuring Self-Efficacy on Sustainable House Choices, Connecting Sustainability and Wealth.

6.2.2 Program Development Cycle

High Self-Efficacy in acquiring one's sustainable home. For the ESD perspective, the Program Designer could begin by answering the questions posed in the Program Development Cycle by Armstrong et al. (2019) which was done hereafter based on the research findings:

Step 1: Define Your Goals

Which sustainable house education outcomes do you want to achieve? High Self-Efficacy in acquiring one's sustainable home.

What changes or actions do you want to achieve as a result of your program? Better wealth preservation, societal well-being, Planet's preservation and thriving.

What resources do you already have to help you achieve your outcome? A wealth of knowledge on Sustainability, Sustainable Homes, Wealth Management.

What resources will you still need? Access to the main stakeholders: experienced and current buyers, data on the building sector and the real estate sector, legislation and protection of consumers and the environment, on innovative solutions around homes and the larger picture or at larger scales.

Step 2: Identify and Assess Your Audience

Whom do you want to reach with your program? Both first-time buyers and experienced buyers.

What is your audience's background? English-speaking or French-speaking, 35 to 55-year-old owners, mostly in France for the 10 main interviews + 6 more interviews with Finnish, English and Peruvian.

What do they already know about sustainable houses? This is to be defined in the questions, according

to their personal context. They do not need to have much prior knowledge.

What attitudes and values do they hold? Ideally, they will be concerned by the health of the planet and be actively looking for ways they can contribute to positive change. This is at the core of personalization where participants will weigh their objectives and I will design the appropriate corresponding curriculum.

How can you involve them in the planning process? By getting to know them and their objectives, by turning them into the builders of their curriculum by using an iterative process based on Human-Centered Design.

Step 3: Strategize

Which activities will help you meet your outcome? An interview focused on their experience, expectations, knowledge, needs.

Which sustainable house messages will resonate best with your audience? This will be tested on their journey to the Program, by asking questions pertaining to their knowledge of the subject, their experience, their expectations, their needs.

How will you evaluate and monitor your program? A list of benefits gained from the learning program will be evaluated by the Learner and by the Trainers, during and/or at the end of the Program.

As far as the positioning of sustainable housing in ESD goes, we need more research on what role housing will play in the future of more sustainable economies and communities, how houses also represent a system of values, and far more educational programs to help people make better and more informed choices. Currently, most ESD work focuses on the increase of shelter in Developing Countries, with very little advice or suggestions (other than energy or water use) for those living in Developed Countries. A new narrative could be proposed around housing and all of its ethics of place aspects which can then positively impact both the environment and society. Only Raworth (2017) specifically mentioned household management as part of her proposed “safe and just space for humanity” (p.44). In the West, the house could actually be placed in the centre of sustainable thinking for both children and adults, and shown to be a pathway into the larger concerns, with small actions each step of the way.

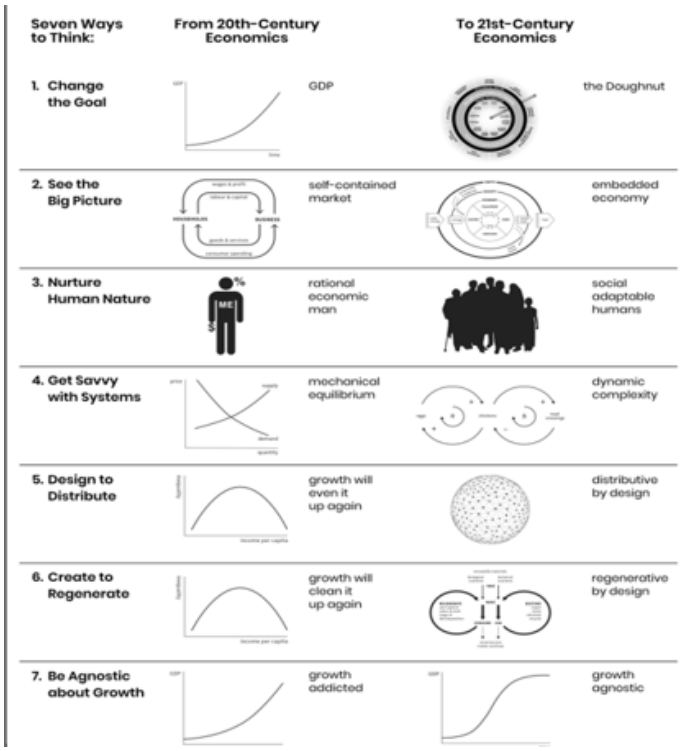
6.3 RQ3 How does one keep, or increase the value of a house?

Generally speaking, for my group of interviewees, one needs to link Self-Efficacy on Sustainable Home choices to wealth, by proposing to master the ability to create all the different representations of wealth through the sustainable house and by managing the future costs closely at the same time.

The beauty and warmth evoked in the instance of Charles, relating to the beauty and gaiety he seeks in his place could relate to Csikszentmihalyi's Autotelic experience for the sustainable house. He would not want this to increase the financial value but to increase the experience of the house itself to him, not caring for anybody else to know nor put a price on it. This, though non-financial, would increase the value to him.

To liaise the findings from my interviews and start the design of a program, here is a representation of the functions of a house as the start of a discussion for my sample and to give a direction worthy of a XXIrst century of true progress, that is, a century of sustainable transformation. To reflect on the propositions of Raworth (2017), and from the Earth for All turnarounds (Dixson-Decleve et al, 2022) here are four ways homes can transform our lives for the better (Figure 7):

- Protect and nurture, via insulation, energy savvy ventilation, renewable energy and water capture. Produce resources, such as water, food, biodiversity.
- Contribute to reduce inequalities, even empower people (including women), by controlling and/or reducing the financial weight of a comfortable roof for all, as currently it represents 70% of people's assets and 25% of their income. This could impact decisions on homes taxation for the poorest 90% to echo the Earth for All turnarounds (Dixson-Decleve et al, 2022).
- Reduce Climate Change, Help Biodiversity, Protect Natural Resources, Nurture Well-being, as homes represent 40% of all energy consumption and 36% of CO2 emissions.
- Concretely embody a pillar of Society, as homes represent: many values: The Rules of the Household, Family, Community, Culture, Financial Wealth.



4 Ways to Transform Homes
Sustainable Home functions and role:
- Protects & Nurtures = Insulated, Ventilated,
Captures and produces (ren) energy, water
Produces resources: water, food, biodiversity

- Contributes to reduce inequalities, empower all
As it currently represents:
70% of households assets in 2024
25% of household costs (income) in 2024

- Reduces Climate Change, Protect Biodiversity, Resources, Wellbeing
40% of all of energy consumption in 2023
36% of CO_2 emissions in 2023

- Concretely embodies a pillar of Society:
Represents many values:
The Rules of the Household
Family
Community
Culture
Financial Wealth

Figure 7 4 Ways to Transform Homes as inspired by this interview sample and Raworth (2017)

Note: Short Term Benefits and Real Estate Agents calls for a Distinct Complementary Service.

Referring to my 16 interviews findings, to date, most information available on the internet or in the public sphere is made by real estate agents, who by trade have a vested interest in the transaction being made and may only provide certain perspectives on the property they represent. People need a more neutral clearly distinct source of information – disinterested by the buying or selling part of real estate - that deals with this topic from a measured, critical thinking stance, with a list of criteria to follow for the best chances of successful investment. Outside of real estate professionals, too much is left to chance, the relative advice of friends or family and often the pressure to find something quickly pushes for panicky or tired decisions not reflecting the importance of home acquisition. Official public information actually translated in English from the Finnish government websites revealed an incredible number of laws that protect the buyer, whereas France revealed quite the opposite[4]. It is likely necessary to take

[4] In Finland, "In the case of real estate, the seller's responsibility lasts for five years." And "The home may also have hidden defects. This refers to damage of which no one is aware", like "water damage, for example. If the home has a serious defect which, if known, would have affected the sale of the home, the seller is obliged to pay compensation to the buyer." https://www.infofinland.fi/en/housing/buying-a-home . In France, the Real estate agent only answers the questions he is asked, implying that the buyer must know what questions otherwise, his clear responsibilities focus on the official documents related to the sale (the title, the owner, the Building's reports) The seller, not the Real Estate agent is not responsible for any defect unknown to him https://www.service-public.fr/particuliers/vosdroits/F2954 seen on July 14, 2023

the context of the country into account when designing an educational program while also sharing best practices around the world and adapting them.

My sample showed that real estate agents were mostly judged as inefficient in their experience of home acquisition, though some interviewees had positive experiences in terms of saving time to find their property as an example from the interviews, Eric remarks what he needs. Irene confirms this. Both examples are below:

> *“external expertise from someone neutral who is not biased” (Eric).*
>
> (The real estate agent) "*will want to sell his property at all costs and will perhaps squeeze a small part of the information which is negative." (Irene)*

6.4 RQ4 How can I encourage sustainable housing Self-Efficacy in my design?

This question of how to encourage sustainable housing self-efficacy found some answers in RQ2 and RQ3 findings above.

Amongst the many valid propositions from the writers of Earth for All (Dixson-Decleve et al, 2022) for my design pertaining to this sample, the following are examples which could resonate with the inner world of each participant: clean energy transition, cooperation, valuing our collective future and social equity.

Meyer linked higher education to a more sustainable mindset. I would argue that Self-Efficacy in sustainable housing would probably equally result in positive action when Self-Efficacy is high for all educated profiles.

Especially in sustainability, and in the case of sustainable housing, complexity can be a barrier unless one could think of co-creating one’s program with a very practical focus on the particular context and the participants involved, making the program designer become more of a knowledge and experience facilitator and project manager and leaving the implementation and the final choices of the program to the learners and future owners.

Embracing complexity and hereafter the self-fueling aspect of a systems approach, as Buchanan explains hereafter, can be useful in understanding the importance of relationships, different identities and agency when it comes to encouraging sustainable housing:

> *"A systems approach focuses our attention on dynamic patterns and structures and the way in which feedback loops both reinforce and change those. It forces us to become aware of patterns and structures that are constitutive of our relationships and thus of our identity and agency, challenging us to understand them in increasingly complex ways. The awareness itself becomes part of the system and inevitably creates its own feedback loops that change the patterns and structures*" (Buchanan, 2019, p.96).

Buchanan underlines that "it is the deep, authentic, concernful engagement with place and the proximate that has the power to shape our moral identity and to motivate us as moral agents" (2019, p.101).

My research has given me a fascinating overview of the current landscape relating to sustainable house acquisition from an educational perspective. In some cases, the answers my interviewees gave were unexpected or at odds with their obvious knowledge. It has become very clear that the house symbolizes so much more than the monetary value or even the immediate family relationships within it. It is part of a much larger ecosystem, of values, of location, of a web of relationships, which move between the "proximate and the distant" (Buchanan, 2019), in ways that most of us undervalue or ignore. Thus, one aspect which will be vital for my program is that of exploring ethics and values and all of those interconnected relationships between both human and non-human. Indeed, current capitalist thinking really disserves the house, by reducing its value to a purely financial one. By placing it with the doughnut ring of Raworth (2017), and by using the systems thinking approach exposed by Buchanan, 2019, p.8) I will be able to build an educational program that will have far-reaching impacts, not only on environmental sustainability, but also on healthy human relationships and community. If we saw housing as a more collective state of being, than as separate ownership where neighbors never speak to one another, our ability to work towards collective positive actions would be manifold. Several participants commented on how valuable sharing was to them.

My research indicates several areas where my interviewees in France felt they needed more help and guidance with this topic, especially concerning money and budgeting. There is no clear framework for owners to calculate this from a more sustainable perspective, so this is something I aim to develop for my training program - an accessible table of reference which includes everything that should be considered when planning long-term costs and expenses outside of the initial purchase price.

Schunk (1984) concluded that “Self-Efficacy … is concerned with people’s judgments of how well they can use the abilities they possess” (1984, p.56) and Bandura (1977) suggested we need to be able to support anxiety. Csikszentmihalyi added that “we move up like that, step by step, getting out of Flow, getting back into Flow” (2014, p.139). My results showed that 50% of the French interviewees felt low Self-Efficacy. That is quite a high rate considering the importance of sustainable knowledge and solutions needed for the future. Twice, these low levels of Self-Efficacy, were expressed after demonstration of their actual capacity to express and having acted on more than one social and environmental concern without linking this to the terms of “sustainable home” or “social and environmental impact”. They and surely many more will, all differently, of course, have the pleasure to validate and rediscover their own abilities and complete them with added enthusiasm more knowledge and implementation. These will be very exciting constructive discoveries.

One aspect that appeared from this notion of low Self-Efficacy was that of cognitive dissonance, witnessing self-constructed barriers to positive sustainable action. This only appeared in one interviewee; nevertheless, I will need to be prepared and creative to manage this, by communicating in ways that won’t raise learners' defenses, as Armstrong et al. (2018p.53) discussed. Although it didn’t appear in my interviews, I believe the other “dragon” of terror management will become increasingly present and should be taken into account as science increasingly warns us of more major environmental dangers. Both of these negative cognitive reactions have an important role in avoidant behavior and denialism.

The article by Meyer (2015) connects to notions of Self-Efficacy in the sense that the education we receive teaches us various forms of this, however, raising the interesting point of whether values influence behavior, or rather other concerns do, is thought-provoking. Does capitalism and its values dominate every act behind sustainable action? Do we need to change our system of values to include unmeasurable but socially and environmentally important things? These questions remain unanswered here but highlight the importance of beginning discussions around ethics. Indeed, Buchanan (2019) work stresses that the role of the ethics of place in all its scope, needs to become present in our daily conversations and concerns as this holds the key to future collective thriving.

Another conclusion from the readings was how researchers mention systems thinking as a key mindset - it appears in Buchanan (2019), Raworth (2017), Fullerton (2015), etc. and would need to be integrated in our national curriculum, along with critical thinking. System thinking also underscores

how our relationships will be key to managing more sustainable futures and our survival (as was always the case in fact). So, in a time of maximum commodification and consumerism, we will need to go back to valuing relationships as a key factor in creating livable, and hopefully satisfying, futures. Let's note here that gaiety and beauty were important factors for quite a few of the respondents, as a life goal over a financial one.

I was very happy and grateful to find in some of my interviewees' own words the expression of a home as the embodiment of functionality, yes, but also of deeper values. There was home as the connection to society and our Planet. Home was also presented as a potentially evolving and highly personalized place for all our different life projects, connected to each other. Hence home was part of a beautiful experience: life on Earth.

6.5 Reflections

Cognitive Dissonance is often cited as a usual suspect in the best literature on how to engage in favor of the Environment (Armstrong et al., 2018). Often, we find ourselves acting in opposition to our convictions, due to lack of time, or lack of financial resources.

An insidious way cognitive dissonance works is when our reasoning builds hierarchies of actions which offer no alternatives. We asked about choices made for the house linked to sustainability. In one case, the respondent focused the attention on a clearly respectful way of managing catastrophes to obfuscate maybe a feeling of not making absolutely perfect sustainable home choices (I1)

> *"Family, priorities of priorities. […] If the house burns, it burns." (I1)*

The time and effort invested in building a new home which nests their dearest could not be without positive impact, yet there is talk of a hierarchy of acceptable catastrophes to distance oneself from further responsibility. Surely, a home could be considered secondary if we disconnect from it, like trying to disconnect from our environment, but it *would* count if the house burns. While the house is in fact not burning, alternatives to perfect sustainable choices don't have to be so bleak. It is not a question of knowledge or intelligence; it is a question of mindset. Just like our Planet is Humanity's environment, individuals' experiences are inseparable from their immediate environment, which is also the mindset. So rather than making too harsh of a judgement on one's actions, rather see if Self-Efficacy could not be ameliorated which could get rid of the need of cognitive dissonance to take

place.

With this example, I can establish that cognitive dissonance stems from a lack of alternatives, so alternatives must be built. Interestingly, 3 of the first 4 interviewees (I2, I3, and I4) recalled low or inexistent expectations for deep (once), or their deepest (twice) experiences of learning (the most important experience in their life). Yet, about enriching learning experiences, interviewees were often witness to alternative lifestyles or acquired learnings which validated or enriched theirs (I2 and I4). Sometimes, they also became, in the most inspiring accounts, the creators of their own learning as Anna, Franck and Gal when building their nest, and Charles by being a parent and participating in a community project.

Transcripts of the interviews will remain anonymous and all the names used here have been changed. The recorded data will be deleted within one year from publishing to respect the respondents and their rights.

6.6 Limitations

One person conducting an analysis and giving scores could be considered a limitation.

The lack of readily available research on my topic was a limitation, as it meant I needed to draw from many different sources, which sometimes only had a very distant relation to my topic. However, this also encouraged more creative thinking on my part and also forced me to read more widely than perhaps I would have done otherwise.

Additionally, ten interviews is quite a limited number so not really representative of any particular population at large, and in a sense, the different nationalities (10 French but then also additional pre-interviews I gave with 4 Finns, an English and a Peruvian) give a mixed response, so it is harder to pin down which trends are only relevant in certain countries. Yet the idea was to begin to design a format which would be start with a limited time, 30 minutes, and rather than doubling on the results found with a questionnaire on a wider audience, which surely would have helped retune the questions, use the second value coding analysis to learn that framework and recognize values, attitudes and beliefs leading to actions within the answers.

There were more men than women (6 and 4, respectively). All were aged 35 to 55, an important

category for home buyers[5]. This said, more "statistics can be a starting point for personas or used to substantiate the more qualitative descriptions" (Stickdorn, 2018 p.40-41). Nevertheless, it is a test of a qualitative start. The views expressed are possible views among the group, yet other ideas could be found in further interviews. In addition, perhaps quantitative research could be conducted to see if they apply to a larger pool of people. I would next elaborate on statistics to assess a more refined base depending on the country and specifics of my Program and would still go deep into qualitative interviews with open questions to stay on the discovery side and propose adapted niche Programs, and if pertinent, include a survey to incorporate existing trends and barriers to discuss in my program.

Reflecting on Armstrong's Table 1 (here in 3.1), and the theories about how people assess sustainability issues information (in this case, climate change), I noted identity protective cognition from 3 out of 4 female respondent (I1, I7, I9) and 1 out 6 male respondent (I2) when they asked me if they answered correctly, or hoped to do so - which may not indicate anything in terms of percentage per gender given the size of the sample but was definitely present, for almost half the respondents. So maybe my respondents tried to give me answers to please me more than to answer for themselves. A clear limitation I will avoid in the future but which I accepted to test the approach.

Self-Efficacy on Sustainable Home Choices was based on the answers to the sustainable home questions, but also on how they connected with sustainability in the questions related to preserving wealth and potentially increasing the value of their wealth. There were questions of "ensuring to make the *right* choice" and building a "*good*" check list. There may have been limitations to use subjective words like "right" and "good" for being synonymous with or reflecting sustainability. Yet if sustainability is to be linked with ethics, then these open questions act as a test in this aspect.

Weighted Self-Efficacy results on the learning experience were either based on real time or felt time and compared to the Quick Evaluation of Self-Efficacy on sustainable home choices. One may argue against using the interviewer's sustainable home expertise to judge if Self-Efficacy was at par with the actual presentation of a 30-minute interview with very open questions. I would argue in favor the factual verification of the number of expressed awareness and application of concerns as per Table 5. The 30-minute interview is intended as a doable quick start into the world of the learner to start the

[5] The age of the typical first-time buyer was 36 years – up from 33 years one year ago – and the typical repeat buyer's age climbed to 59 years from 56 years in 2021. Both ages are the highest in the history of the data set. https://www.nar.realtor/newsroom/nar-finds-share-of-first-time-home-buyers-smaller-older-than-ever-before seen on July 15, 2023

design of the Program and as such it would be developed and adapted again as the Program would enfold. I hope to always keep proposing other sets of better sustainable house related questions - to develop better interview sessions. Here my time was concentrated on how Self-Efficacy and Flow theories can help design a program on sustainable home choices.

6.7 Ethics

This research is ethically sound as all participants were informed of what their interview content was to be used for, and all identities were kept secret and anonymous. Their interview data (mp3, video, notes) has been kept in a private account on my computer to which no one has access. These materials will be kept for a period of one year after the end of my research and then subsequently destroyed.

There may be some particular bias from the limited sample and due to the fact that most of the interviewees knew the Interviewer beforehand; however not only people who were known to be interested in climate change and sustainability were asked, in order to get a chance at a fairer spread of differing opinions and concerns.

6.8 Further Research

Educational Program Design. The next step after the completion of this paper will be to explore the design of an iterative and participatory educational program. Such research will include an analysis of the various instructional designs which exist already, such as ADDIE, Human-Centered Design, Dick and Carey, Bloom's Taxonomy, the SAM model, and so on, in order to see which would be most appropriate and effective in my teaching context. Additionally, I would look for different psychological and pedagogical approaches that would be helpful to try out. This would be followed by a pilot phase where my designs would be tested and improved upon, leading finally to an educational design to be used in the real world and the construction of an educational business.

Self-identity and agency in sustainable housing. This research unearthed all kinds of directions and pathways to follow, which there is no space for here. One of this was in the work of Buchanan (2019) where he spoke about self-identity and agency as being embodied. Embodiment is a growing research field within education and is something that may shed interesting light on the subjects of both ESD and sustainable housing.

Sustainable Home Acquisition & UN Goals Additionally, placing sustainable home acquisition within the UN Goals and within ESD could help create new steps for policy makers and educational institutions to take this subject more seriously and to develop practical programs towards social change.

Security The 2009 Stiglitz report stated "Well-being is multi-dimensional" (Appendix 3). One of its eight dimensions which resonated quite a lot in 2023 in France's media was insecurity. Yet "security", was only a criterion I heard in 2 out of 10 interviews: (I1, I2) in France, 1 out of 4 interviews in Finland (A). This dimension, increasingly central to prevalent media focus, could be a specific theory-based ingredient of the interview design.

Sustainability and Sustainable Homes in Finland. Finland has a Shame Day where anyone can see what anyone pays in income tax. This actually gives pride to who pays. In itself this annual day of full transparency answers quite a few Self-Efficacy criteria: measurable, explicit goals, proximal goals, as a year can pass by quite fast, On the subject of Sustainability, measuring one's energy consumption against the average national individual consumption per citizen could be the next Challenge Day to establish? Clearly Finland has good chances as it already monitors its overall energy consumption quite closely. More Self-Efficacy for the Finnish will surely continue to maintain their level of satisfaction as Citizens of the world.

Mobility and House Tenure The uncalled inclusion in the answers of the notion of temporality concerning house tenure (how long a home lasts) indicated a degree of mobility to be an increasingly important reality and as place impacts virtue (Buchanan, 2019), one may want to inquire if our sense of belonging could affect our sense of responsibility in a society where moving is more common. Another aspect of mobility for the sustainable home is related to the ability for the owners to move easily from their place to another without being taxed too heavily, allowing them to respond to better opportunities or, in the case of heavy or time restrictive taxation, forcing them to find solutions to improve their current place. This aspect touches on people's freedom of movement.

Time Management and Sustainability. With the importance of time and the current power race for attention, and time, I might conclude that given the importance of the different results based on real time as opposed to felt time, the importance of the drivers towards time management and sustainability could be a very interesting study too.

Regarding bias and the place of humans and AI in research, the future of our prevailing academic format at this date could be addressed. If the tables of scoring results in the Quick Evaluation integrated the counting of expressed and non-expressed answers (to follow a non-scientifically opposable 1/0 scoring) to be more factual and hence scientific, they were initially filled with unscientific subjective scoring. The results were unscientific but much finer. The Thesis Director for this thesis had to make a correction. So Table 4 was used but one can ponder if our current IT development, call it Big Data or AI, would supplant humans with their power to scientifically mass calculate at much higher speeds than humans many more factual 1/0 answers with a multiplicity of criteria from way more multiple sources than my interviews. These would be receivable as more impressive factual- based science and it would ultimately be done more effectively than most humans. Yet for one thing, IT computation would still rely on programming choices by human which could be subjective and the errors amplified by powerful processors. Should we not then question the validity of subjective scoring by humans to complete *our* computers results? Or computers results, in case A.I. would actually allow programming choices by machines? Human interviews, human interactions built on history, context, emotions are far from just factual. Humans are not always right but actions following words translate into trust and transparency of communication is called honesty. Would people keep their self-worth – this is not far from Self-Efficacy here in this Education paper - if we only follow the powerful conclusions from black and white computations of machines? What about the development of human critical thinking? Humans need to find their usefulness before they lose it. Now challenged by data gathering and at least partly self-generated decision-making software, would Academia reconsider its format to embrace, always in a transparent and verifiable fashion - the power of machines but also the collective wisdom and surprising depth of human feeling? It could start with a vetted inclusive collection of inputs. One idea would be to include classroom discussions and test them in research to dare challenge machine made programs - built by few from the IT sector and their powerful sponsors – and propose novel angles from the rich heritage, dynamism and inclusiveness of the successful cohorts of students and researchers from all horizons.

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APPENDICES

Appendix 1 United Nations (2020).

Transforming Our World: The 2030 Agenda for Sustainable Development Education for Sustainable Development aims to raise knowledge, awareness and action (UN, 2020, p.17)

United Nations - Specific goals aimed at the Program are within Goal 4, 11 and 12

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote

sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic Services and upgrade slums

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015J2030, holistic disaster risk management at all levels

11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

Goal 12. Ensure sustainable consumption and production patterns

12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

UNESCO Education for Sustainable Development (2020)

Within their priority actions areas, I position my project in areas 2 which is all about "transforming learning environments" (2020, p.28), and 5 which is interested in how "local level actions" in communities promotes "meaningful transformative actions" (2020, p.34). I am also in particular agreement with their concept of pedagogy where I will "enable learners to live what they learn and learn what they live" allowing their own life experience and knowledge to play a role and inform in their educational experience and learning outcomes and, I will help to "empower people to take responsibility for present and future generations and actively contribute to societal transformation" through housing and concerns around the house in community and society (2020, p.8).

UNESCO and ESD surely prone socially and environmentally oriented actions but I did not find attempts at looking for detailed educational frameworks such as mine, combining education towards homes and sustainability, well-being and wealth, all directly impacting essential and combined areas of human life.

Though the very phrase “sustainable development” could be a self-conflicting notion in the sense that it still conveys that economic development implies society’s well-being and environmental protection, UNESCO’s *Education for Sustainable Development Roadmap 2030*, confers that exposure to reality is important in “societal transformation towards a sustainable future” (UNESCO, 2020, p.18). Along this reflection are two more: to go beyond consumerism and to favor critical thinking before potential technology miracles when it comes to sustainability problems. (UNESCO, 2020 p.18). Similar to Lonka and Dewey, UNESCO proposes “interactive, project-based, learner-centered pedagogy” (UNESCO, 2020, p.8)

Appendix 2 Fullerton (2015) 8 Principles

1. In Right Relationship – Humanity is an integral part of an interconnected web of life in which there is no real separation between "us" and "it." The scale of the human economy matters in relation to the biosphere in which it is embedded. What is more, we are all connected to one another and to all locales of our global civilization. Damage to any part of that web ripples back to harm every other part as well.
2. Views Wealth Holistically – True wealth is not merely money in the bank. It must be defined and managed in terms of the well-being of the whole, achieved through the harmonization of multiple kinds of wealth or capital, including social, cultural, living, and experiential. It must also be defined by a broadly shared prosperity across all of these varied forms of capital. The whole is only as strong as the weakest link.
3. Innovative, Adaptive, Responsive – In a world in which change is both ever-present and accelerating, the qualities of innovation and adaptability are critical to health. It is this idea that Charles Darwin intended to convey in this often-misconstrued statement attributed to him: "In the struggle for survival, the fittest win out at the expense of their rivals." What Darwin actually meant is that: the most "fit" is the one that fits best i.e., the one that is most adaptable to a changing environment.
4. Empowered Participation – In an interdependent system, fitness comes from contributing in some way to the health of the whole. The quality of empowered participation means that all parts must be "in relationship" with the larger whole in ways that not only empower them to negotiate for their own needs, but also enable them to add their unique contribution towards the health and well-being of the larger wholes in which they are embedded.
5. Honors Community and Place – Each human community consists of a mosaic of peoples, traditions, beliefs, and institutions uniquely shaped by long-term pressures of geography, human history, culture, local environment, and changing human needs. Honoring this fact, a Regenerative Economy nurtures healthy and resilient communities and regions, each one uniquely informed by the essence of its individual history and place.
6. Edge Effect Abundance – Creativity and abundance flourish synergistically at the "edges" of systems, where the bonds holding the dominant pattern in place are weakest. For example, there is an abundance of interdependent life in salt marshes where a river meets the ocean. At those edges the opportunities for innovation and cross-fertilization are the greatest. Working collaboratively across

edges – with ongoing learning and development sourced from the diversity that exists there – is transformative for both the communities where the exchanges are happening, and for the individuals involved.

7. Robust Circulatory Flow – Just as human health depends on the robust circulation of oxygen, nutrients, etc., so too does economic health depend on robust circulatory flows of money, information, resources, and goods and services to support exchange, flush toxins, and nourish every cell at every level of our human networks. The circulation of money and information and the efficient use and reuse of materials are particularly critical to individuals, businesses, and economies reaching their regenerative potential.
8. Seeks Balance – Being in balance is more than just a nice way to be; it is actually essential to systemic health. Like a unicycle rider, regenerative systems are always engaged in this delicate dance in search of balance. Achieving it requires that they harmonize multiple variables instead of optimizing single ones. A Regenerative Economy seeks to balance: efficiency and resilience; collaboration and competition; diversity and coherence; and small, medium, and large organizations and needs.

Regenerative Capitalism Overview

"We need to replace the industrial mind with the ecological mind"
Wes Jackson (cited in Fullerton, 2015, p.28)

Fullerton has worked for JP Morgan for 20 years and it had gradually dawned on him that the economic system he was an expert in, was the "root cause" of the "ecological, economic and social" (Raworth 2017, p.235) crises of our times. He concluded that "We can - and must- bring our economic theory and practice into alignment with our latest understanding of how the universe and our humanity actually work!" (Fullerton, 2015, p.12). He now sees the current form of capitalism as a "deeply flawed economic ideology" and that we

need a new "more effective, systemic way of thinking[5] about our next economy" (Fullerton, 2015, p.4). Thus he and Raworth have a similar outlook. He was interested in exploring the assumptions behind the ideologies of both liberal and conservative positions asking whether "exponential, undifferentiated growth" is really the "path to long-term prosperity" (Fullerton, 2015, p.5). He hopes regenerative capitalism will help shift current mindsets towards a more sustainable future and sees it as a more holistic systemic approach with one main idea:

"The universal patterns and principles the cosmos uses to build stable, healthy and sustainable systems throughout the real world can and must be used as a model for economic-system design (Fullerton, 2015, p.8).

Chapter 1. Introduction (Fullerton, 2015, p.14) confirms that our Planet is finite and all is connected in it. It establishes bonds and a hierarchy from our biosphere allowing our society to be, within which our economy stands with its financial system. Only with this reality in mind and looking for the adequate behavior to nurture all its components can we achieve sound and sustainable decisions (Figure 8).

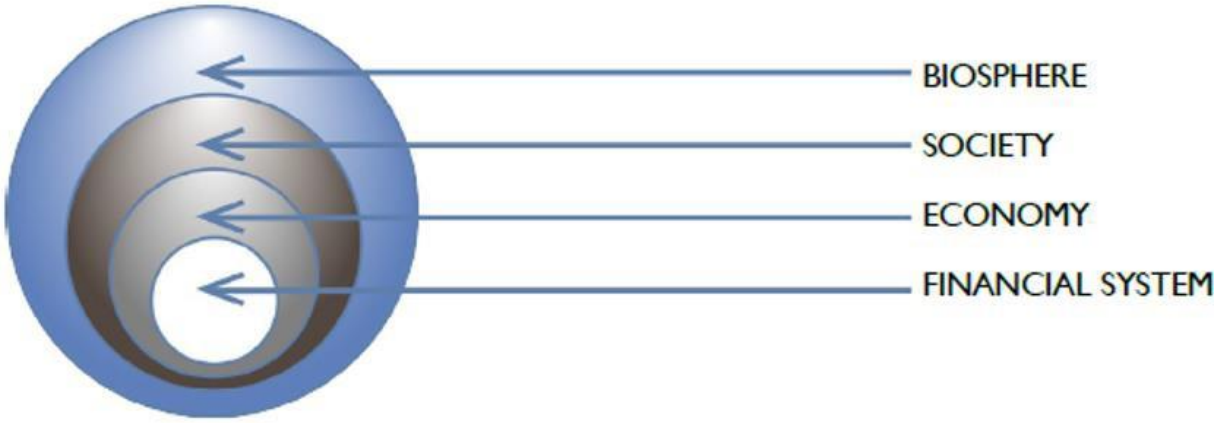


Figure 8 Finance and the economy embedded in society and the biosphere, Fullerton, 2015, p.45

Essentially Fullerton is interested in building "healthy human networks" where sustainability is the "natural byproduct of systemic health" and views this as a "new stage" (Fullerton, 2015, p.10) of capitalism which keeps what works from the old system, but fixes its weaknesses. He, like Raworth, sees true wealth as englobing community, nature, education and many other hidden aspects, and that GDP is too limited in its outlook. He believes that only when all stakeholders are able to contribute

[5] "Systems thinkers are always on the lookout for leverage points where a small change in one thing can make a big difference to the whole system." (Dickson-Declève et al, 2022, p.3)

towards finding solutions, are those solutions sustainable, and that only through such processes can we find more creative and appropriate economic policies. This reinforces the importance my educational program must have on students being able to incorporate their ideas into the curriculum and the need for personally inspired learner journeys.

Fullerton mentions the need to include "head, heart and hands" and how he believes economics should help create healthy human networks, inspire people to think in more global terms and allow creative ideas to become concrete action which underline a society based on a "pluralistic system of regenerative economics aligned with the patterns of regenerative health" (Fullerton, 2015, p.12).

Chapter 2, "From A Mechanistic To A Holistic Worldview" (Fullerton, 2015, p.27): from my perspective of housing, it is clear that this is usually framed from a reductionist viewpoint, meaning people only consider the purchase price of a house and none of the wider relationships going on around the house in its community and environment, ie. the holistic perspective. For this, a useful framework is the study of systems which allow us to see all forms of relationships with causes and effects, developed by Donella Meadows in 1972. Fullerton summarizes her idea as us needing to "reimagine the paradigm, or belief system, out of which the system arises" (2015, p.21). Thus by examining the systems nature has created for sustainable life we can apply those principles to our economic system. All of life builds towards more complexity through its self-sustaining functioning and therefore "becoming", while currently we deplete resources and build towards destruction, using an "extracting economy" (Fullerton, 2015, p.25). Fullerton reminds us too that Adam Smith specifically mentioned that the invisible hand should function within "a moral context of sympathy toward one's fellow man" (Fullerton, 2015, p.28) and just as Raworth reminded, this side of Adam Smith's theory has been totally forgotten.

Fullerton points out that Rene Descartes was the French philosopher who developed the theory of reductionism and that reducing things to their smallest parts was the only way to understand "complex phenomenon" (Fullerton, 2015, p.31) but Fullerton argues this can be seen as either outdated and/or as a false assumption, yet it still carries so much power and remains emblematic of our current societal philosophical standpoint. Additionally, Darwin's concept of the survival of the fittest (Darwin, p.207[6]), in

[6] "any being, if it vary however slightly in any manner profitable to itself, under the complex and sometimes varying conditions of life, will have a better chance of surviving" (Darwin, 1859 from Darwin, 2009 p.207) and also

context, can actually be seen to mean survival of the one best adapted to their surrounding environment (Fullerton, 2015, p.32) - very different from the competitive interpretation we are all used to today. Fullerton argues all life in fact thrives by using collaboration, rather than competition, thereby allowing all species to interact and survive together. I would also add that humans are the only creatures who actively pursue the extinction of other species.

Overall, Fullerton urges us to see that more and more research demonstrates that the "economic system is embedded in the biosphere" and does not exist separately from it (2015, p.38). He considers our current economic framework to be based on theoretical errors. Like Raworth, he sees the GDP measurement as limited and unrelated to actual human prosperity, environmental health or any sense of well-being. He does not believe the market alone will find solutions, and echoing Raworth, believes we need a new "breed of capitalism" which has a more holistic approach (Fullerton, 2015, p.42). He imagines "a mosaic of healthy human networks" which position themselves within economics and the biosphere (2015, p.43). He cites work by the architect Bill Reed, who believes that Mechanistic Design = Degenerating = Reductionist Thinking into parts, whereas Natural System Designs = Regenerating = Holistic Thinking Patterns (Figure 9).

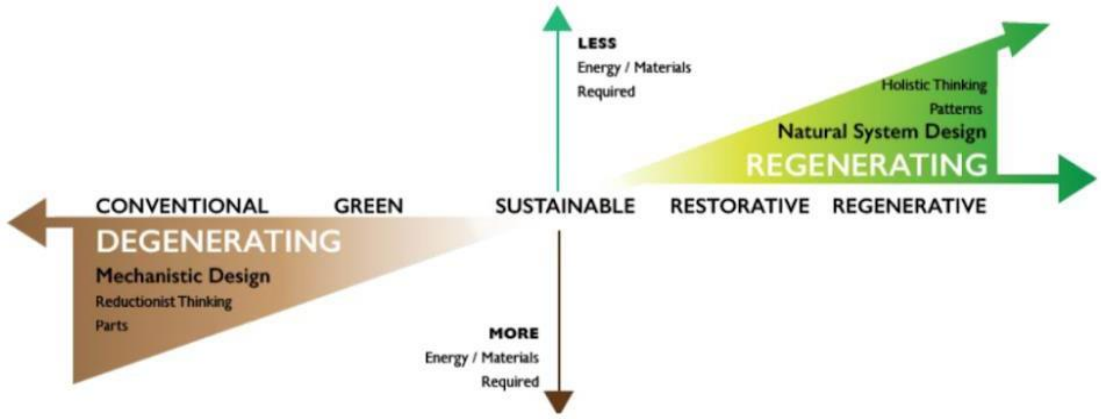


Figure 9: Fullerton, Trajectory of Ecological Design taken from architect Bill Reed, 2015, p.43.

Fullerton's interconnected principles related to Housing:

1. In Right Relationship (Fullerton, p.44)

This concept asserts the dependence of each system to each other in a finite Planet, each being

"this principal of preservation, or the survival of the fittest, I have called Natural Selection. It leads to the improvement of each creature in relation to its organic and inorganic conditions of life" (Darwin, 1859, from Darwin, 2003, p. 130)

embedded into each other, from the economy and its financial system into society to society dependent on a thriving Planet. This systems thinking implies interrelations and dependencies which work in multiple directions, at all scales. It also explains that our Planet and everything on it function thanks to the health of all its components from the smallest to the biggest and that these relationships act in synergy. What he calls systemic health and symbiotic or synergetic collaboration would mean to align or assemble all components, systems and relationships towards preserving or making the whole thrive. My understanding is that this could be based on respecting, getting inspired, exploring and acting to embrace the infinitely more complex Planet's systems proved more coherent and better made from the point of view of their timelines as compared to humanity's systems timelines. From a micro perspective, this would apply to integrating this mindset at the smaller scale of home choices where the macro mindset values in favor of our Planet and ourselves would resonate in our human values.

2. *Views Wealth Holistically (Fullerton, p.50)*

This concept reframes the idea of capital as including multiple types all of which are in alignment with "core human values" and which appreciate all the "interdependencies" (Fullerton, 2015, p.52). Fullerton believes that changing our value systems is one of the most challenging aspects of regenerative capitalism. He underlines how the current value system tries to transform everything into monetary value and thereby ignores any aspect that can't be fitted into that ideology. Anything which remains unmeasured therefore has no value.

Fullerton writes that "true wealth" contains much more than monetary concerns, that the relationships between different forms of capital are important and finally things of monetary value end up being controlled by greed whilst all the rest by "affection and foresight" which echoes what Raworth discovered when volunteers were paid and how that destroyed their interest in giving (Fullerton, 2015, p.56). A holistic view of wealth would mean that when one's personal needs are satisfied, attention would be turned to the larger community and the capital of nature and social. He cites 9 forms of capital: Intellectual, Spiritual, Social, Material, Financial, Living, Cultural, Experiential, Natural. He believes people would be more interested in community and connectedness and less by consumerism. Essentially the ideology of profit above all else would fall away. As an educator, I would focus on determining which of these forms of wealth correlates deepest with the learners and the Right Relationship mindset Fullerton proposed.

3. *Innovative, Adaptive, Responsive (Fullerton, p.55)*

In this key principle, Fullerton sees the fitness concept as relating to being "innovative, adaptable and responsive" (2015, p.57) meaning our need for creative and critical thinking will be key and our job is to find the economic systems that best fits with the realities of the earth and the human life on it. To do this Fullerton believes we need more decentralization, "agile… interconnected business webs", a core purpose agreement of sustainable prosperity and the "removal of money and propaganda from politics" (2015, p.
60).

4. *Empowered Participation (Fullerton, p.58)*

In this principle, Fullerton explains that "everyone matters and the health of any human economy is dependent upon everyone's unique contribution to the health of the whole" (2015, p.60). This requires a leadership willing to support such participation and who governs with a sense of servitude towards its people. Essentially this approach requires an active democracy and more equality. Terrible inequality is proven to create large amounts of social and health problems. Therefore everyone should be able to access "quality healthcare and public education […] clean water and affordable housing" as without these things people will not be able to fully participate or contribute to society (2015, p.62). In *Earth for All*, researchers propose the *Empowerment Turnaround* (Dixson - Declève, 2022, p.93 – 106) which addresses the enormous potential education has to find all inclusive and equitable solutions for all genders in order to address the issues linked to stabilizing world's population and its aging, and touching important family decisions. I believe that learning provided to all on how a home can reflect these issues, with gender equity[7] and family life values as a fundamental component could play a practical part. The two educational approaches presented in this turnaround are critical thinking and systems thinking, which appear all the more adapted to our deluge of misinformation and our embedded systems.

5. *Honors Community and Place (Fullerton, p.62)*

[7] With a personal desire to later propose an adapted educational program to lonely mothers on house choices, I first thought of only interviewing women. A Finnish student from my Master cohort warned me that as a woman she would probably consider the resulting program less for not including the point of view of men. I realized I was thinking too hard to already personalize my program at the cost of excluding valuable information from all concerned and the importance of the relationships of all concerned. My interviews actually would need all the genders including their diversity and always would.

In this last principle which relates most to my research paper, Fullerton explores how local diversity and the celebration of it, is essential to creating the vitality of systems. There is a resilience inherent in the "mosaic" of different human cultures, traditions, geographies and experiences which we should tap into (2015, p.64). He is against any form of "monoculture" and wishes to support the diversity of local community efforts, also drawing inspiration from the Transition Town movement. He feels the globalization of international corporations has encouraged a sense of placelessness which has a negative effect on people's relationships to place and whose consequence is disconnection. Also, this more easily allows exploitation and creates a mental distance to the realities on the ground. He feels too many companies have an empire-building mindset which actively discourages any connections or empathy. He would like to see such companies honoring the places in which they work and collaborating more with local populations or businesses, potentially in "cooperative ownership models" (Fullerton, 2015, p.67).

From Bill Reeds Integrative Design Collaborative mentioned by Fullerton, my project fits closest to the idea of building communities around "shared values" and how they can integrate different aspects of regenerative living into their daily lives through their housing and local community participation.

Appendix 3 Stiglitz Report (2009) (on well-being)

p.10 “from a “production-oriented” measurement system to one focused on the well-being of current and future generations

P.14 “After all, a low-income household with above-average wealth is not necessarily worse-off than a medium-income household with no wealth.” *Especially if wealth is more than financial.*

p.14 Well-being is multi-dimensional

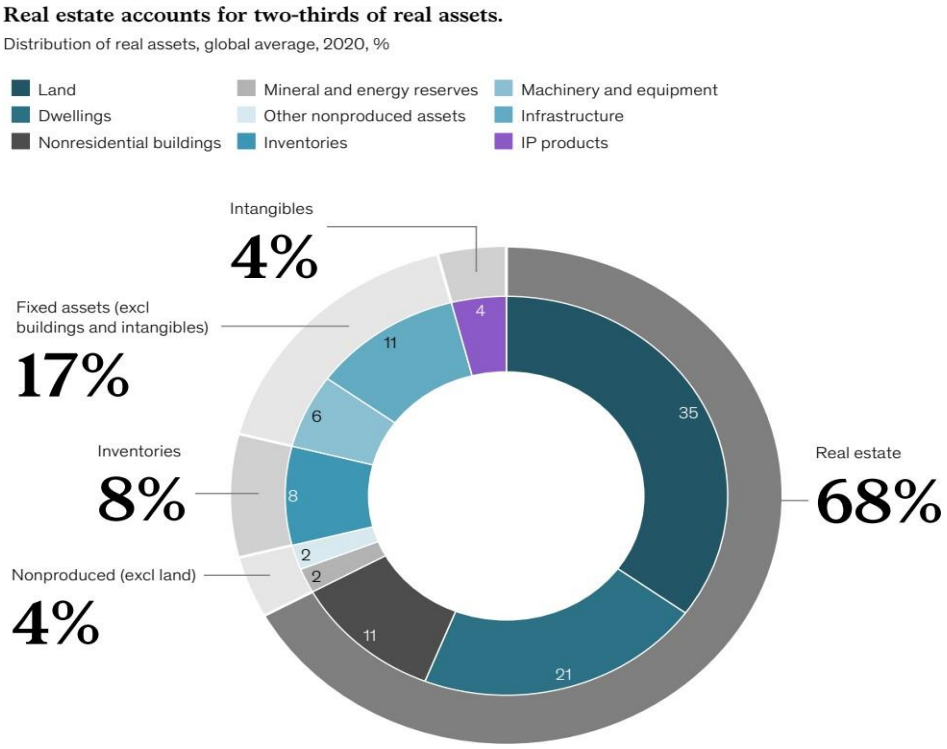
To define what well-being means a multidimensional definition has to be used. Based on academic research and a number of concrete initiatives developed around the world, the Commission has identified the following key dimension that should be taken into account. At least in principle, these dimensions should be considered simultaneously:

i. Material living standards (income, consumption and wealth);
ii. Health;
iii. Education;
iv. Personal activities including work
v. Political voice and governance; (impacting life satisfaction (p.15):
vi. Social connections and relationships;
vii. Environment (present and future conditions);
viii. Insecurity, of an economic as well as a physical nature. P.17

Sustainability assessment requires a well-identified dashboard of indicators.

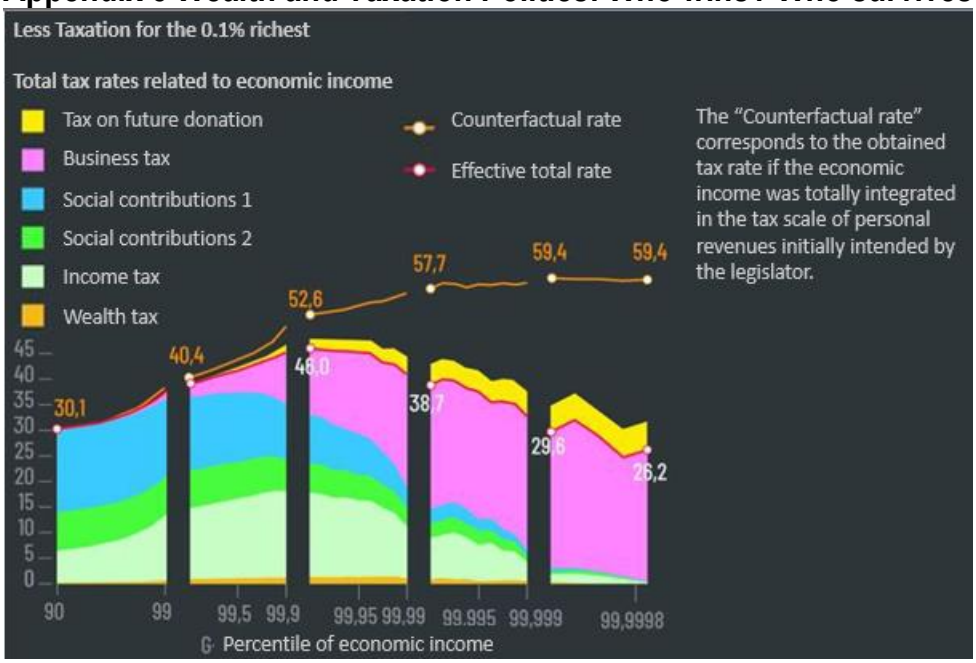
“confusion may arise when one tries to combine current well-being and sustainability into a single indicator. To take an analogy, when driving a car, a meter that added up in one single number the current speed of the vehicle and the remaining level of gasoline would not be of any help to the driver. Both pieces of information are critical and need to be displayed in distinct, clearly visible areas of the dashboard. “

Appendix 4 Importance of Real Estate in Wealth



Mc Kinsey, Woetzel et al, (2021) *The rise and rise of the global balance sheet, How productively are we using our wealth*? November 2021

Appendix 5 Wealth and Taxation Politics: Who wins? Who survives?



Alternatives Economiques, Moisan E. (2023). RESEARCH SIDE "Economists have studied the tax revenues of the wealthiest who pay less tax (26.2%) than 90% of the population (taxed at 30.1%). " https://www.alternatives-economiques.fr/milliardaires-paient-dimpots-autres/00107212 Taxes decrease for the top 0.1% richest in France, especially impacting much larger amounts from business revenues than salaries/income. Meanwhile, additional revenues on the occasional rental from homeowners in the example hereunder are planned to be taxed 72% more.

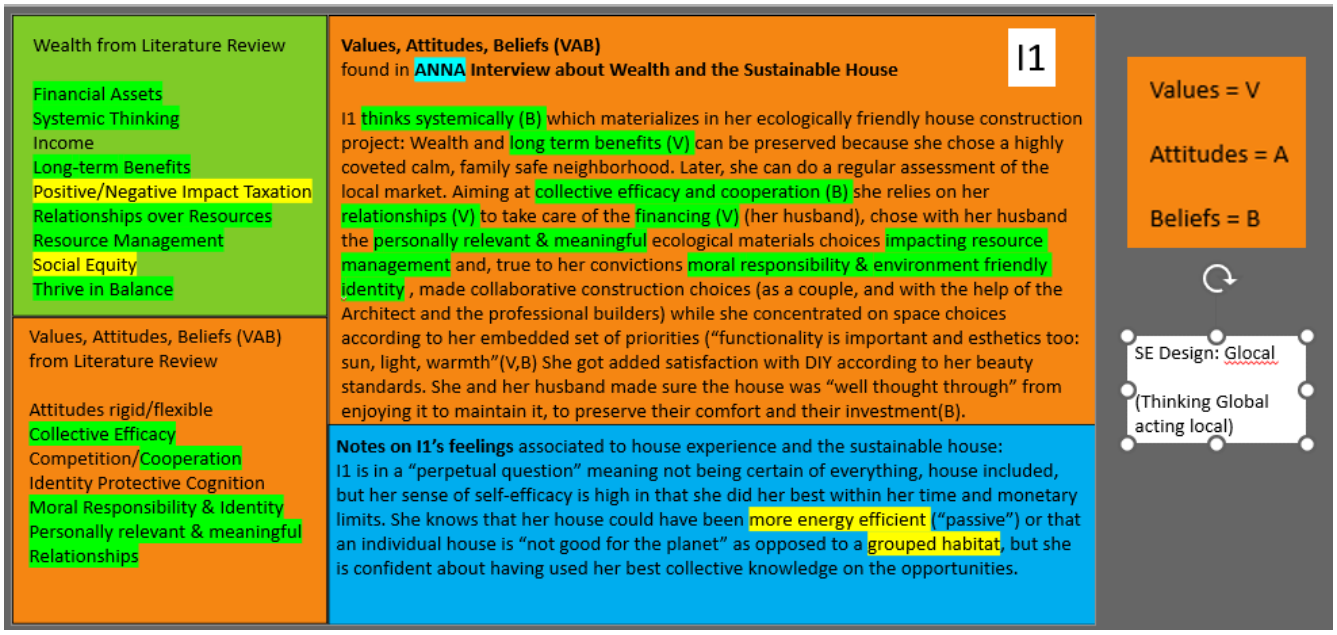
Impact on additional revenues from a home with a room rented 60 days times 60€ or 60x60=3,600 €

Taxation Base		Marginal Tax Rate	Taxation on additional revenues from Homes	Taxation Increase	Revenues (base 100)	Net Revenues on 3,600€ Example
Current Base	29%	30.1%	8.73%		91.27	€ 3,286
New Law	50%	30.1%	15.05%	72%	84.95	€ 3,058

As per https://www.capital.fr/immobilier/airbnb-combien-vous-allez-perdre-avec-la-fin-de-labattement-a-71-1480465 - 27 sept 2023

Translated as "Airbnb how much will you lose with the end of the taxation base reduction"

Appendix 6 Value Coding on Learning Experience, Wealth, Sustainability and the Sustainable House



Appendix 7 Scoring basis for the Quick evaluation on Self-Efficacy on sustainable home choices

Quick evaluation on self efficacy on sustainable home choices						
Interviewe	Name	**Highest self efficacy** with the expression of awareness and application of more than one social **and** environmental concern	**High self efficacy** with the expression of awareness and application of more than one social **or** environmental concern	**Moderate self efficacy and/or** the expression of awareness and application of more than one social and/or environmental concern	**Low self efficacy despite** the expression of awareness and application of more than one social and/or environmental concern	**Lowest self efficacy and/or** no concerns being expressed nor applied (none concerned in the sample)
I1	Anna	**5**				
I2	Bryan			3		
I3	Charles	5				
I4	David		4			
I5	Eric			3		
I6	Franck	**5**				
I7	Gal	5				
I8	Henri				2	
I9	Irene				2	
I10	Josy				2	