

IDENTIFYING STAKEHOLDERS' PERSPECTIVES ABOUT WHICH LEARNING
DESIGN FEATURES FOR ADULTS SHOULD BE INTEGRATED INTO THE
EXHIBITS AND PROGRAMS OF THE FUTURE MUSEUM OF ECONOMICS OF
BRAZIL

BY

JULIANA MOZACHI SANDRI

DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Education in Education Policy, Organization and Leadership
with a concentration in Human Resource Development
in the Graduate College of the
University of Illinois at Urbana-Champaign, 2022

Urbana, Illinois

Doctoral Committee:

Professor Ronald L. Jacobs, Chair
Professor Wen Hao David Huang
Associate Professor Eunjung Grace Oh
Associate Professor Hyun-Sook Kang

ABSTRACT

Initiatives to deliver financial literacy to populations are offered by a wide range of institutions. Among them, central banks focus on financial literacy because when people make wiser financial decisions, the central banks are more likely to fulfill their societal mission. One of the most common initiatives of central banks in this regard is to establish a money museum.

Aligned to the educational intent of these museums, the Banco Central do Brasil (BCB) is currently undertaking and sponsoring the development of the Museum of Economics of Brazil by changing the current Museum into a new one, with new features. The future Museum aims to offer a distinct educational intent for its visitors. Until recently, the various stakeholders of the future Museum had been given limited opportunity to comment on the nature of the learning experience of visitors, especially of adult visitors.

In this sense, the purpose of this study was to identify the stakeholders' perspectives about which learning design features for adults should be integrated into the exhibits and programs of the Museum of Economics of Brazil. Because the future Museum will contribute to the BCB's results for society, stakeholders should be involved to align visitors' learning and the BCB and the Museum's purposes. The study was conducted as a needs assessment, with four research questions guiding it.

The needs assessment conducted has included the analysis of official documents, interviews with internal and external stakeholders, and observations conducted in other similar museums. The results present a list of the learning design features that should be integrated in the Museum of Economics of Brazil. Having the learning design features should help the planners of the future Museum to design a facility that promotes learning among adult visitors and therefore helps the BCB to achieve its societal mission.

ACKNOWLEDGEMENTS

I would like to start by expressing my deepest gratitude to my academic advisor, Professor Ronald L. Jacobs, for his guidance through this endeavor of completing my doctoral studies. He was a reference from the first day of classes to the last minute of the dissertation. He always pushed me to achieve my best, and beyond an extraordinary professor, he was a mentor with an incredible sense of humor, turning my hardest scholarly days into enjoyable moments.

I also would like to thank my committee members, Professor Wen Hao David Huang, Eunjung Grace Oh, and Hyun-Sook Kang for their valuable feedback. Thank you for your kindness, advice, and support. In their names, I also thank the faculty members and administrative staff of the College of Education.

It is with great prestige that this study has been concluded with the support of the Lemann Center for Brazilian Studies. To be nominee a Lemann Graduate Fellow was an honor. Thank you, John Tofik Karam and Elis Artz, for believing in my potential.

From the Banco Central do Brasil (BCB), I would like to thank the team from the Department for Financial Citizenship Promotion for opening the doors of the Museu de Valores for me. I do it in the name of Karla Valente, Manager of the Museum, but the gratitude reaches all the team. Without your support, the study would not exist. I also would like to thank the Deputy Governor of the BCB, Maurício Moura, for the sponsorship that gave me the necessary wings necessary to flight this journey.

For my friends and relatives, I have no words to thank for the patience and endless words of encouragement. Among them, I have a special word for Arthur and Sofia, my kids, and owners of my heart, for always being on my side, including the countless weekends that I

have missed the movies to study. At last, I would like to thank my husband, Adalberto. This is for you, and without you none of this would have been possible.

Table of Contents

LIST OF TABLES	vi
LIST OF FIGURES	vii
CHAPTER 1: INTRODUCTION	1
CHAPTER 2: LITERATURE REVIEW	17
CHAPTER 3: METHODOLOGY	54
CHAPTER 4: RESULTS	89
CHAPTER 5: CONCLUSION	156
REFERENCES	182
APPENDIX A: IRB APPROVAL	222
APPENDIX B: CONSENT FORM	223
APPENDIX C: INTERVIEW PROTOCOL	227
APPENDIX D: TABLE OF OBSERVATIONS	229
APPENDIX E: OBSERVATION PROTOCOL	231
APPENDIX F: LETTER OF INSTITUTIONAL SUPPORT	232
APPENDIX G: CODING PROTOCOL	233
APPENDIX H: TABLE OF CODES	234
APPENDIX I: TABLE OF RESULTS: WHAT IS	239
APPENDIX J: TABLE OF RESULTS: WHAT SHOULD BE	242

LIST OF TABLES

Table 2.1: Comparison of multidisciplinary models of Needs Assessment characterized by Results' Focus	31
Table 3.1: Summary of Sources	74
Table 3.2: Observations	77
Table 4.1: Summary of Respondents' Profile	91
Table 4.2: Summary of the differences between 'What Is' and 'What Should Be'	143

LIST OF FIGURES

Figure 2.1: The OEM	33
Figure 2.2: Kolb’s Model of Experiential Learning	42
Figure 3.1: Entrance of the Museu de Valores	55
Figure 3.2: Exhibits of the numismatic collection	57
Figure 3.3: Biggest gold nugget in exhibition in the world	58
Figure 3.4: Examples of pieces from the art collection	59
Figure 3.5: Data Analysis Process	82
Figure 4.1: Exhibits’ panels	93
Figure 4.2: Facilities of the Art Collection	94
Figure 4.3: Examples of Employment of Language	97
Figure 4.4: Exhibit ‘Você já parou para pensar?’	99
Figure 4.5: Historic building of the MIDE	103
Figure 4.6: Historic building of the Citéco	110
Figure 4.7: Historic Hall of the Economy Museum of FED St. Louis	104
Figure 4.8: Facilities of the MIDE	116
Figure 4.9: Facilities of the Citéco	117
Figure 4.10: Facilities of the Economy Museum of FED St. Louis	117
Figure 4.11: Art in the Citéco	119
Figure 4.12: Interactivity in the MIDE	122
Figure 4.13: Interactivity in the Citéco	122
Figure 4.14: Interactivity in the Economy Museum of FED St. Louis	122

CHAPTER 1: INTRODUCTION

Context

The relationship of people with Money is as ancient as the introduction of Money itself. Regardless of nationality, dealing with Money is part of the daily lives of billions of people around the world. Nevertheless, the high frequency of the use of Money does not mean that people have knowledge and adequate consumer habits to properly deal with it. Because of that, financial literacy of citizens has been a concern of countries for decades, especially after the 2008 financial crisis, which was visibly grounded on the poor relationship of individuals and their financial lives (Klapper, Lusardi, & Panos, 2012; Pinheiro, 2008).

To prevent new financial crisis and to help people better managing their financial lives (therefore improving their relationship with Money), governments, private and public organizations have been discussing how to financially educate their populations (OECD, 2005). Initiatives of financial education are promoted by a wide range of institutions as international organizations, governmental agencies, business and business associations, foundations, financial regulators, and central banks. They are designed to reach individuals or to improve the functioning of financial markets and economies (Gnan, Silgoner, & Weber, 2007).

The investments to financially educate individuals are focused primarily on traditional educational programs which effectiveness depends on local characteristics and the context of implementation (White, 2009; Xu & Zia, 2012). The major focus of financial education initiatives, though, is on children and teenagers. However, that does not mean that adults are financially literate (Hogarth, 2006). On the contrary, financial education is clearly a need for adult learners, who have specific learning needs (Tindell, Taylor, & Sprow, 2010).

Brazil is part of the worldwide efforts to financially educate its population. The country has adopted its national strategy of financial education in 2010, by which members of public and private organizations have been coordinating efforts to deliver financial literacy to different strata of population (Brasil, 2010). Brazilian efforts are still growing and evolving and, in 2020, the country has revisited its National Strategy for Financial Education and instituted a forum for discussion and coordination of the topic, to advance the delivery of financial literacy (Brasil, 2020).

The Banco Central do Brasil (BCB), the Brazilian monetary authority and supervisor and regulator of the Brazilian financial system, is part of these efforts as a member of this coalition, called Fórum Brasileiro de Educação Financeira [Brazilian Forum for Financial Education]. Financial Education is part of the strategic agenda of the BCB, the called Agenda BC#, together with Financial Inclusion, Competition, Transparency, and Sustainability (Banco Central do Brasil, 2021).

The delivery of financial literacy has been embraced by many central banks around the world (Apostoaie, 2010; Fluch, 2007; Minehan, 2006). Central banks invest in delivering financial literacy because when people make wiser decisions and protect themselves from borrowing, savings and investment blunders, it contributes to the efficient distribution of resources, helping to build and to support prudent policies, what is vital to the future of nations' economies (Apostoaie, 2010; Fluch, 2007). A financially literate population, at the end, helps central banks to achieve their purposes¹.

¹ According to the International Monetary Fund, the “key role of central banks is to conduct monetary policy to achieve price stability (low and stable inflation) and to help manage economic fluctuations.” (IMF, 2021).

Aligned to worldwide central banks' efforts, the BCB has been investing in the delivery of financial literacy, among other initiatives, by managing its money museum. Aware of the importance of the Museum to the economic memory of the country and its potential to contribute to promote financial and economic education, the BCB has decided to expand the potential of the current museum - called Museu de Valores - and to transform it into the first museum of economics of South America. The objective of the future Museum of Economics of Brazil will be not only to preserve the economic and monetary history of Brazil but, most of all, to create appropriate context to financially educate its population, including adults, therefore contributing to the achievement of the BCB's societal mission.

Problem Statement

The BCB is currently undertaking and sponsoring the development of the Museum of Economics of Brazil, a new national facility. Globally, many central banks have developed similar types of museums that are intended to both inform and educate citizens on financial literacy. Consistent with this broader trend, the emerging museum in Brazil also seeks to have a distinct educational intent for its visitors by changing its current Museum into a new one, with new learning design features.

Until recently, the various stakeholders of the Museum had given limited attention to the nature of the visitors' learning experiences, especially of adults, who are frequently neglected in museums (Dudzinska-Przesmizzki & Grenier, 2008; Monk, 2013). However, since delivering financial literacy contributes to the achievement of central banks' societal mission, making explicit various stakeholders' perspectives of how the future Museum should achieve its educational intent, especially for adults, seems critical for aligning the learning initiatives to the organizational efforts. If the future Museum of Economics of Brazil aims to

contribute to the accomplishment of the BCB's purposes by promoting learning among visitors; and if the alignment of learning initiatives and organizational efforts is given by the stakeholders of the project; then the learning design features that should be integrated in exhibits and programs of the future Museum must be in accordance with stakeholders' perspectives.

The diversity in worldwide museum collections reinforces their role as important destinations for learning and entertainment not only for children but also for adults, who present specific learning characteristics (Hein, 2013). Learning in adulthood is shaped by what adults need to learn, want to learn, and where to learn (Merriam, Caffarella, & Baumgartner, 2007). Adult Learning principles apply to any learning situation, including financial education, which must be explored within the specific context of adult learning in order to be understood by this audience (Forté, 2014). By the same token, the general one-size-fits-all approach that ignores Adult Learning principles is inadequate to promote adult learning in museums (Carpena, Cole, Shapiro, & Zia, 2017; Falk, 2008). The learning experiences provided by museums do not work the same for all visitors, so learning more about a specific group, such as adults, turns possible to better serve the needs of individuals and, consequently, of society as well (Falk, 2008).

Although museums play an important learning role in our society (Clover et al., 2010), studies regarding adult learning in museums did not receive yet the consideration they deserve (Dudzinska-Przesmizzki & Grenier, 2008; Monk, 2013). There are few studies about financial education initiatives that take into consideration Adult Learning principles (Tisdell et al., 2010). As a result, there is a gap in understanding the commitment of museums to Adult Learning and how they can contribute to developing knowledge and habits in multidisciplinary themes such as Financial Literacy (Grenier, 2007; McCray, 2016).

There are opportunities to discuss how adults learn in museums on any topic, and, regarding financial issues, the opportunity is even greater since most of the studies conducted are still targeted to children (Grek, 2009; Sachatello-Sawyer & Fellenz, 2000). Efforts to promote financial literacy tend to focus on schools' curricula (Gnan et al., 2007). Financial education initiatives are typically designed to complement programs offered by the formal educational system at schools (Fluch, 2007). Considering that adults are hardly coming back to school benches to benefit from financial education, it is necessary to find alternative paths to financially educate them (Hastings, Madrian, & Skimmyhorn, 2012).

If in the past museums were limited to cultural and artistic expositions, nowadays there are examples of museums with diverse collections such as environment, science, language, games, and entertainment, broadening the functions of museums, including themes of people's daily lives, opening new opportunities and new themes for the learning role of museums, such as financial literacy (Clover, Sanford, & Jayme, 2010; Mirghadr, Farsani, Shafiei, & Hekmat, 2018). Financial literacy is a multidisciplinary subject that raises extra challenges, especially in adulthood (Atkinson & Messy, 2012; Bruhn, Leão, Legovini, Marchetti, & Zia, 2013). Adults, in general, even though may have taken a long list of courses on financial issues, may not be considered a financially educated group (Apostoaie, 2010). In this sense, museums, which are classic informal learning places, can be further explored as learning places to financially educate adults (Grenier, 2007; Lusardi, 2019; Mirghadr et al., 2018).

According to the OECD, financial literacy levels in adults are low across economies, even in most developed countries (OECD, 2020). In the United States, for example, less than four in ten adults can answer basic questions about economic and financial terms and concepts, basic to understand daily economic events (Walstad, 1998).

In Brazil, the recently published Brazilian Index of Financial Health, which measures knowledge and behavior on financial literacy as well as innovative concepts such as financial freedom and financial security points out that, in a scale from 0 to 100, the average of the Brazilian citizen on financial literacy is 57, with extreme results measuring as low as 26 (FEBRABAN, 2021). Evidence like these suggest that there is plenty of space for improvement of the financial literacy levels in the adult population, including Brazil (OECD, 2020).

The importance of delivering financial literacy to population is given by describing its absence (Hogarth, 2006; Stark, 2006). Financial education is supposed to help credit strategies; management of debts, prevention to frauds and money laundering; and many other relevant aspects that heavily affect the most vulnerable segments of society (Carpena et al., 2017; Dick & Jaroszek, 2014; Lusardi & Mitchel, 2013; OECD, 2005; Pinheiro, 2008; Potrich et al., 2018; Roa et al., 2014; Xu & Zia, 2012). For anyone living in a market economy, understanding basic economic concepts and making sound financial decisions are survival skills (Hogarth, 2006; Stark, 2006).

Since adult learners are more likely to learn when they participate and apply back their knowledge according to their experiences, museums are adequate places to promote the learning of financial issues, demanding a deep understanding of adults' learning needs (Kim, You, & Park, 2016; Knowles, Holton, & Swanson, 2015). In this sense, most central banks around the world deposit on their museums the responsibility to deliver financial literacy to population (Minehan, 2006). Because financial literacy is the link that helps people to make connections between Economics, Finance and their daily lives, delivering it helps central banks to accomplish their purposes (Minehan, 2006).

Financial literacy presents a pragmatic perspective for central banks (Hogarth, 2006). As a common output of central banks, the learning efforts involved in delivering it must be aligned throughout all the organizational levels (Anderson, 2009; Clardy, 2008; Torraco & Swanson, 1995). Considering the challenges involved in the alignment of the learning efforts to deliver financial literacy and the impact on its societal results, the delivery of financial literacy through its museum is part of the BCB's strategic agenda. More than this, the delivery of financial literacy is embraced, indirectly and directly, by the BCB's mission and vision, reflection of its legal mandate (Brazil, 2021):

- Mission of the BCB: “to ensure the stability of the currency purchasing power, to foster a sound, efficient and competitive financial system, and to promote the economic well-being of society.” (Banco Central do Brasil, 2021).
- Vision of the future of the BCB: “to be recognized for promoting inclusion, transparency, sustainability and competitiveness within the financial system and for stimulating citizens' financial education.” (Banco Central do Brasil, 2021).

The BCB has implemented its museum in 1972 and, aiming to contribute to the accomplishment of its organizational results, it has launched its first financial education program in 2003, as a way to contribute to the implementation of the monetary policy and the culture of stability (Apostoaie, 2010; AAMV, 1988; Araujo & Pimenta de Souza, 2012; Banco Central do Brasil, 2018; Gnan et al., 2007; Minehan, 2006). Since their beginning and until nowadays, the learning initiatives of the Museu de Valores have been targeted primarily to schoolchildren and college students, lacking specific features to promote adult learning (Araujo & Pimenta de Souza, 2012; Banco Central do Brasil, 2018; Ferreira, 2013).

Different from the United States, where even public museums are funded by hybrid sources, the Museum of Economics of Brazil is going to be fully funded by public resources, so it is imperative that resources are used well (Rosenstein, 2010). As a public museum, the future Museum of Economics of Brazil will strength its social responsibility to deliver public value for the whole society, contributing to tomorrow's world (Kaufman, 1980). The future Museum of Economics of Brazil will carry the importance of the BCB's purpose to support public good, strengthening the need to be relevant to citizens' daily lives and to promote lifelong learning (Dierking, 2010; Scott, 2010).

The implementation of the Museum of Economics of Brazil brings the opportunity to expand the scope of action of the current Museu de Valores by including learning features especially designed for adults, aligning them to organizational efforts, therefore fostering the contribution of the Museum to the achievement of the BCB's societal mission. The future Museum aims to strength its educational intent, diminishing the distance between economic and financial concepts and the daily lives of individuals (Banco Central do Brasil, 2018). Because the societal mission of the BCB includes adults as part of the population, features that promote their learning must be identified and integrated into the exhibits and programs of the future Museum of Economics of Brazil.

Purpose and Research Questions

The purpose of this study was to identify stakeholders' perspectives about which learning design features for adults should be integrated into the exhibits and programs of the future Museum of Economics of Brazil. Because the Museum contributes to the BCB's results for society, stakeholders should be involved to promote alignment of learning initiatives throughout all levels of the organization. The study will help the BCB to increase the value

added to society by subsidizing the planners of the future Museum of Economics with relevant information to implement a museum that informs and educates adult citizens on financial literacy.

To fulfill the purpose of the study, the specific research questions were conducted as steps of a Needs Assessment and aimed to answer the following:

Research question #1: In what ways do the current exhibits and programs of the Museu de Valores potentially promote learning among adult visitors?

Research question #2: What are the perspectives of stakeholders of the Museum of Economics of Brazil about the ways adult visitors might learn from its future exhibits and programs?

Research question #3: What are the differences between the current ways of promoting learning among adult visitors at the current Museu de Valores and stakeholders' perceptions of the future Museum of Economics of Brazil?

Research question #4: What are the learning design features that should be integrated in the exhibits and programs of the future Museum of Economics of Brazil?

Significance of the Study

From the theoretical perspective, the study aims to contribute to the advance of the body of knowledge of Adult Learning in museums, especially those related to Financial Literacy. But is from the practical perspective that the study is going to make its more significant contribution. The study is contributing to timely identify the most important learning design features for adults that should be integrated in the future Museum of Economics of Brazil's exhibits and programs. By doing that, it will be helping the BCB's to achieve its societal mission by delivering financial literacy for adults and, consequently,

contributing to the economic development of the whole country. In Walstad (1998) words, “the development of basic economic literacy is an important goal for a democratic society that relies heavily on informed citizenry and personal economic decision-making” (p.3).

The contribution of the future Museum of Economics of Brazil to the BCB’s societal mission will be given by raising awareness of ordinary citizens about personal financial issues, encouraging critical reflection about the best use of financial resources, bridging History of Money, Art, and Economics, and being a communication channel between the BCB and the society (Banco Central do Brasil, 2019). Although these aspects may be developed in both children and adults, considering the role of adults in the economic and financial world, fostering adult learning contributes in a timelier way to the achievement of the BCB societal mission, since children must grow-up before actively participating in the financial system.

Definition of Terms

The definition of basic terms for the development of this study encompasses: Adulthood; Adult Learning; Financial Literacy and Education; Inputs; Learning Design Features; Museum of Economics; Needs Assessment; Organizational Levels; Outcomes; Outputs; Processes; Products; and Stakeholders.

- Adulthood: it is a sociocultural construction, but legal definitions are generally defined by age (Merriam & Brockett, 1997). The OECD considers adulthood, for financial literacy purposes, 18 years of age or more (OECD, 2020). Considering the financial lives of adults, “true financial adulting goes beyond paying your bills on time. It’s also about planning for the future, managing debt, and mitigating risk” (Crewley, 2017). For the purpose of this study, ‘adults’ are the individuals who are fully developed and mature, capable of taking along

their life responsibilities (Merriam-Webster, 2020). According to Brazilian laws, civil adulthood is acquired with 18 years old.

- **Adult Learning:** general definitions are based on variables such as how adulthood is understood; the distinction of education versus learning; the intentionality of the activity; purpose and goals; context; and international understandings (Hatcher & Bowles, 2006; Merriam & Brockett, 1997). Different from the term ‘education’, which encompasses only planned activities, the term ‘learning’, adopted by this study, also includes unplanned and incidental learning of everyday life (Merriam & Brockett; 1997).

- **Financial Literacy and Education:** definitions are composed by two different and related aspects, which can be heterogeneous and broad (Hung, Parker, & Yoong, 2009; Lusardi & Mitchel, 2009; Remund, 2010). The first aspect is related to the distinction between ‘literacy’ and ‘education’ and the second is related to the definition of ‘financial’.

Literacy refers to the ability of understanding and applying the knowledge, while education refers to the learning process. Financial Literacy refers to the competence itself, a combination of awareness, knowledge, skills, and behaviors related to financial issues (Amari & Jarboui, 2015; Atkinson, 2008; OECD 2020). Education focuses on the process of enhancing individuals’ competence on financial topics (Amari & Jarboui, 2015; Way, 2014). As an analogy, financial education is the road that leads to financial literacy.

Regarding the definition of ‘financial’, the expressions ‘financial’ and ‘economic’ may be used as synonyms or distinct concepts (Amari & Jarboui, 2015; Hogarth, 2006). This study adopts the broad definition of ‘financial’, which includes personal finance, economics, and other consumer education, what some authors also call either economic or consumer literacy and education (Apostoaie, 2010; Hastings et al., 2012). The range of the term ‘financial’

adopted by this study encompasses from personal finance to economic issues (Apostoaie, 2010).

- Inputs: the raw materials that an organization can use in its processes to deliver useful ends (Kaufman, 2006). It includes ingredients, human and physical resources, equipment, facilities, time, skills, knowledge, attitudes, regulations, policies, laws, money, values, culture, history, goals, and objectives (Kaufman, 1981; 1983; 2011). Inputs are considered organizational efforts (means) (Kaufman 2006; 2011).

- Learning Design Features: are general characteristics that are deliberately employed to promote learning (Oliver, 2007). They focus on practice rather than theory (Goodyear, 2005). They support different learning strategies and encompass, but are not limited to, structure, time, sequency, tools and resources, physical and virtual environments, role of people involved, task, activities, and modes of participation (Boelens, De Wever, & McKenney, 2020; Conole, 2013).

- Museum of Economics: also found under the denomination of ‘economy museum’ or ‘museum of economy’, it incorporates the broad and expanded concept of ‘financial’, including financial, economic, and consumer concepts (Apostoaie, 2010; Hastings et al., 2012).

- Needs Assessment: is understood as a systematic, rational means of identifying priorities of learning initiatives (Witkin, 1994). According to Kaufman (2018b), it is a “formal process that identifies and document gaps between the current and desired and/or required results” (p.62), arranges them in order of priority and selects problems to be solved (Kaufman, 2018b; Kaufman & Guerra-López, 2013; Kaufman & Lick, 2005).

- Organizational Elements: are the levels of organizations that contribute for delivering results (Watkins, 1998). The concept adopted by this study derives from the Organizational Elements Model (OEM), and it includes the efforts related to means as well those related to ends. They consist of Inputs, Processes, Products, Outputs, and Outcomes (Kaufman, 1981; 2011; Kaufman & Guerra-López, 2013).

- Outcomes: the results of the organization that add value to society and community, as societal contributions (Kaufman, 2006; 2011). These results are planned at the Mega level, and they traduce the world - an ideal world - we want to help creating for our children (Kaufman, 2006; 2011).

- Outputs: the results (aggregated products) an organization can or does deliver outside of itself (Kaufman, 1986). These results are planned at the Macro-level to external clients or society (Kaufman, 2011).

- Processes: “the means, processes, activities, procedures, interventions, programs, and initiatives an organization can or does use in order to deliver useful ends” (Kaufman, 2006, p. 178). Processes are considered organizational efforts (means) (Kaufman, 2006; 2011).

- Products: the ‘en route’, blocks, of pay offs and results of individuals or small groups that form the basis of what an organization can or does deliver outside of itself (Kaufman, 1981; 2006). These products are results planned at the Micro level, also called operational planning (Kaufman, 1981; 2006).

- Stakeholders: those who have a stake, an investment, in securing a certain project (Brookfield, 1986). For the purpose of this study, the main stakeholders of the future

Museum of Economics of Brazil are BCB's senior executives (as internal stakeholders), and financial educators and museum experts (as external stakeholders).

Limitations

The study aimed to timely contribute to the initiative of undertaking the development of the Museum of Economics of Brazil by identifying, through a needs assessment, the main learning design features for adults that should be integrated in its exhibits and programs. Limitations of the study consisted of: (i) the scope of needs assessment proposed; (ii) the understanding of adults as a homogeneous group; (iii) the absence of evaluations; (iv) sampling; and (v) impacts caused by the pandemic of Covid-19.

There is a frequent confusion between the terms 'needs assessment' and 'needs analysis', with impacts for the scope of needs assessments. According to Watkins, Leigh, Platt, and Kaufman (1998), "a needs assessment should be designed to identify and prioritize needs, while a needs analysis should break an identified need into its components parts and determine solution requirements" (p. 40). In this sense, this study did not aim to identify causes or solutions for the discrepancies - it stopped before, limited to present the list of the learning design features for adults that should be integrated into the Museum of Economics of Brazil's exhibits and programs, consistent with stakeholders' perspectives (Watkins et al, 1998).

In addition, the needs assessment did not review the strategic planning of the BCB. Strategic planning processes are crucial for identifying, ratifying, and/or aligning the societal mission of any organization. The Mission and Vision statements of the BCB, result of its strategic planning process, were given and they reflect not only what the stakeholders understand as being the direction for the organization, but also the legal mandate for the BCB.

As a second limitation, for the purpose of this study, adults were considered to be a homogenous group. Traditional demographic data like age (young/elder), gender, profession, ethnicity, marital status, educational background, race, or religion may be a powerful tool to divide the population. However, the differences among the learning process of sub-groups were not considered in the needs assessment conducted, although there is research supporting that demographical differences may impact the learning process of financial issues (Davoli & Rodríguez-Planas, 2020; Hung et al., 2009; Lowman, 2015; Savoia, Taue & Santana, 2007; Smiraglia, 2016; Taylor & Neill, 2008; Tucker, 2014; Way, 2014).

The third limitation of the study was the fact it did not aim to evaluate the effectiveness of the Museum's learning design features. Although formative and summative evaluations may help exposing the interpretations that visitors make and avoiding misconceptions when implementing learning design features, they were not employed within the timeline of this study (Jeffery-Clay, 1998; Rennie & Johnston, 2004). Despite similarities, needs assessment and evaluations are not alike (Watkins et al., 2012). Needs assessment is proactive and before-the-act, while evaluation is reactive and after-the-act (Kaufman, 2006).

The fourth limitation was related to sampling in two ways. First, the purposeful sampling employed was not representative of the Brazilian adult population at large, but of the most relevant portion of it, considering the purpose of this study. Regarding adult visitors of the future Museum of Economics of Brazil, it did not access the entire adult population. By including experts as external stakeholders, purposeful sampling aimed to provide a reliable and trustworthy source of data for identifying adults' learning needs regarding financial issues. Because of their specialized knowledge, expertise, and access to relevant portion of the population, the researcher believed that external stakeholders could significantly contribute for

the needs assessment. In addition, real adult visitors of the future Museum would not be able to participate in the study since the museum does not exist yet.

Second, it might be argued that the identification of museum features that promote adult learning in exhibits and programs is not limited to museums sponsored by central banks. Indeed, other kinds of museums could also be sources of data regarding adult learning. However, other kinds of museums do not carry the societal mission that central banks do regarding involving the delivery of financial literacy. The societal mission of central banks is a crucial component of the Museum of Economics of Brazil; therefore, the sample was restricted to these museums.

At last, the fifth limitation is related to the pandemic caused by Covid-19, which turned to be a limitation as well as an opportunity to this study. Observations in loco did not happen considering the traveling constraints and sanitary conditions. On the other hand, the pandemic has fostered the digitalization process in many aspects, including museums, which have provided virtual access to places and documents that were not available before the pandemic. If in one hand the pandemic inhibited the observations in loco, on the other hand it opened opportunities to explore virtual places and electronic documents that would not be accessible before.

CHAPTER 2: LITERATURE REVIEW

The relevant literature review of this study encompasses four major bodies of knowledge: (i) Adult Learning; (ii) Needs Assessment; (iii) Financial Literacy, and (iv) Learning in Museums. It is the intersection of these four bodies of knowledge that theoretically supports this study. Each of these bodies of knowledge consist of a specific section of this chapter, and the last section, Conceptual Framework, summarizes the concepts employed by the study.

The first section aims to contribute to the identification of the most relevant principles and assumptions of Adult Learning. The review of literature of this section is important to identify which attributes and features can contribute for the purpose of promoting adult learning. In addition, the discussion about the perspective of Human Resource Development in Adult Learning helps understanding (i) how adult learning efforts can contribute to accomplishment of the societal mission (relevant for this study considering that the existence of the Museum is linked to the BCB's purposes); and (ii) the need of alignment among learning initiatives and organizational efforts.

The second section discusses Needs Assessment as a tool to guide the process of solving the research problem proposed in the study. It presents the definition of needs assessments and the benefits of employing them. This section also explores the different models of Needs Assessment, their focus, and the adequacy of their use when promoting the linkage among learning initiatives and organizational efforts.

The third section, Financial Literacy, presents the most practical and applied body of knowledge among those herein explored. Financial Literacy has been an output of many central banks around the world (Minehan, 2006). Among the initiatives to deliver financial

literacy, the management of money museums has been considered the most elemental initiative offered by most central banks (Fluch, 2007; Roa et al., 2014). The review of literature of this section discusses why financial literacy is so important for central banks, contributing to the societal mission of these organizations.

At last, the fourth body of knowledge reviewed, *Learning in Museums*, discusses the educational intent of museums. Although the idea of education as the primary function of museum has been controversial in the past, most of museum's definitions include some statement about learning, reinforcing the growing importance of the field (Hein, 2006b; Tišliar, 2017). This section explores the theoretical approaches for identifying the features that support museums as learning places.

Adult Learning

In Merriam et al. (2007) words, “understanding learning in adulthood is like piecing together a puzzle; there are many parts that must be fitted together before the total picture emerges” (p. 193). Although adult learning is characterized by pragmatism, important parts of this puzzle are the called Adult Learning Theories, which provide reference for understanding the learning process in adulthood, identifying the ways and conditions under which adults may develop their capacity for action and expression (Bélanger, 2011; Cross, 1981). The literature about Adult Learning is diffuse and there is little consensus on how many theories exist, how they should be grouped for discussion, or how they should be labeled (Merriam, 1998; Merriam et al, 2007; Knowles, 1984). Attempts can be categorized based on (i) adult learners' characteristics; (ii) adult's life situation; and (iii) changes in consciousness of the learner (Merriam, 1987).

Although studies on Adult Learning have been in the literature since the 1920's (Beder, 1989), Malcom Knowles' publication about Andragogy, in the late 1960's, gathered more interest and, consequently, more attention from researchers (Brookfield, 1986; Cross, 1981; Holton, Swanson, & Naquin, 2001). Knowles' Andragogy was based on the perception that children's pedagogy was inappropriate for adults (Knowles et al., 2015; Merriam, 1987; Merriam & Brockett, 1997). In fact, the term Andragogy was firstly used in the 1920's to describe a set of principles that applied to adults in any learning situation, but it was Knowles (1981) who became it popular by defining Andragogy as the art and science of helping adults to learn (Knowles et al., 2015; Merriam & Brockett, 1997).

The andragogical model was based on adult learners' characteristics and consisted of a set of assumptions that currently grounds the most known principles of Adult Learning (Holton et. al, 2001; Knowles et al. 2015; Merriam & Brockett; 1997). Andragogy was defined by Knowles (1975) as a growing body of knowledge, with 'at least' the following assumptions: (i) self-directedness; (ii) importance of experience; (iii) readiness to learn; (iv) learning orientation; (v) internal motivations; and (vi) purpose of learning (Holton et. al, 2001; Knowles, 1975; 1978; 1981; Knowles et al., 2015; Merriam et al., 2007; Roessger, Roumell & Weese, 2020; Yang, 2004).

Knowles' Andragogy assumed that adults have the self-concept of essential self-direction (Knowles, 1981; 1984). In this sense, the first and central assumption of Andragogy is self-directedness learning (SDL) (Brookfield, 1986). According to SDL, adults are self-responsible for their own lives, including the initiative for planning, carrying out, and evaluating their own learning (Aljafari, 2019; Knowles, 1981; Knowles et al., 2015; Yang, 2004). In fact, SDL is considered to be as old as history, with its routes in the ancient times of the Greek, but Knowles' views on SDL were probably the most worldwide adopted (Brockett

& Hiemstra, 1991; Brookfield, 1986; Merriam, 1998; Merriam & Brockett, 1997; Merriam et al., 2007).

Self-evaluation is a crucial component of SDL, since nothing makes an adult feel more childlike than being judged by another adult (Knowles, 1981). Despite learners have the learning control in SDL, it does not mean that they work alone (Brockett & Hiemstra, 1991). The focus of SDL is on individuals without ignoring the social context (Aljafari, 2019; Cross, 1981). In fact, it is not an 'all or nothing concept' (Brockett & Hiemstra, 1991). It varies in assistance: adults have the tendency to self-directedness, but they may be dependent in certain situations (Brockett & Hiemstra, 1991; Brookfield, 1986).

The second andragogical assumption established that experience is a rich resource for learning (Knowles 1981; 1984; Knowles et al., 2015). Adults have different backgrounds than youth, not only with more experience but also with different kinds of experiences (Knowles, 1981). Because of that, they have more learning resources to explore (Knowles, 1984). Nevertheless, the greater experience of adults may also bring negative effects to their learning process, such as carrying along biases, old habits, and closeness of mind to new ideas (Knowles et al., 2015). Experiences may be affective or cognitive, and any kind of experience interfere in the learning process (Dufresne-Tassé, 1992; Hohenstein & Moussouri, 2017; Merriam et al., 2007).

The third and fourth assumptions of Andragogy, readiness to learn and orientation to learning, are intertwined. Adults are ready to learn what is useful to their lives and, because of that, they are willing to cope with learning in their real- life situations (Knowles, 1981; Knowles et al., 2015). This perception of readiness coincides with the developmental phase of adults (Knowles, 1984; Knowles et al., 2015). Because adults are ready to learn what they perceive they will confront/need it in real-life situations, the orientation to learning is also

called problem-centered or task-centered (Brookfield, 1986; Knowles, 1981; 1984; Knowles et al., 2015). Similarly, readiness to learn is also known by the expression “teachable moment” (Knowles, 1981).

The fifth andragogical assumption was internal motivation, which relied on the presumption that adults’ motivations for learning may be external - but if internal, they are more powerful (Knowles et al., 2015). Although external motivations such as better jobs, promotions, and high salaries are important, internal motivations such as self-esteem, quality of life, and job satisfaction are stronger when guiding the learning process (Knowles, 1984; St. Clair, 2002). At last, the sixth assumption, learning purpose, was explained by the statement of ‘need to know’: adults need to know why they need to know before learning (Knowles et al., 2015; St. Clair, 2002). It means that adults need to know something about the learning before investing energy in (Knowles, 1984).

Despite Andragogy is the most common – even seminal - set of principles used to explain Adult Learning, it is not free from critiques (Baumgartner, 2003b; Brookfield, 1986; Holton et al., 2001; Gunther, 1994; Knowles et al., 2015; McCray, 2016; Merriam et al., 2007; Roessger et al., 2020; St. Clair, 2002). Few scholars disagree with Knowles’ ideas, although critiques have been common over the years, from different natures (Davenport & Davenport, 1985; Henschke, 2011; Knowles et al., 2015; Roessger et al., 2020).

One of the earliest critiques came from Elias (1979), who considered that Knowles’ arguments were unconvincing and inadequate, despite well intentioned. For him, children and adults learn in the same way and the importance of experience for learning had been presented in previous works, such as John Dewey (Elias, 1979). Supporting Elias, Levitt (1979) argued that Knowles’ learning theory was insufficient to support the concept of Andragogy, suggesting incorporating a deeper, philosophical, and political meaning into Andragogy. Other

scholars also have pointed that the dichotomy between children and adult learning presented by Knowles was inappropriate, which has promoted unproductive debates (Brockett & Hiemstra, 1991; Darbyshire, 1993; Hartree, 1984; Henschke, 2011).

The practice and research of Andragogy have also been criticized. Some authors missed the empirical research on Knowles' ideas (Henschke, 2011; Jarvis, 2010; Rachal, 2002). Although Knowles is the best-known modern interpreter of Andragogy, Rachal (2002) argued that it was not possible to say with confidence that Andragogy has been tested, demanding more empirical research about it (Baumgartner, 2003b; Merriam, 1987; Rachal, 2002). From the research perspective, critiques also came from the difficulty to know if Andragogy was a theory of learning, an approach to teaching, or a useful set of assumptions - in any case, lacking the explanation of why and how adults learn (Baumgartner 2003b; Davenport & Davenport, 1985; Hartree, 1984; St. Clair, 2002; Rachal, 2002).

According to Davenport & Davenport (1985), much of the controversy about Andragogy had a philosophical nature. They argued that, as a philosophy, it lacked epistemology. For Darbyshire (1993), Andragogy was not a philosophical approach, but merely a collection of teaching techniques to be used by students of any age (also Baumgartner, 2003b). Knowles' ideas were also critiqued for being idealistic, by presuming that all adult learners were willing to engage in a highly participatory learning, and for externalizing what educators wanted to hear (Cross, 1981; Darbyshire, 1993; St. Clair, 2002; Cross, 1981).

At last, probably the most common critique of Andragogy relied on the lack of social aspects and for not including the social agenda among its set of assumptions (Knowles et al., 2015; Roessger et al., 2020). Scholars argued that Knowles focused on individual learners and ignored the sociocultural factors and marginalized groups, supporting status quo (Baumgartner, 2003b; Hartree, 1984; Lee, 2003). Critiques about the lack of social context

included bewilderment of the social consequences of learning (Brockett & Hiemstra, 1991; Hartree, 1984).

The debate over Andragogy is far from over and its principles should be separated from the andragogical model itself (Davenport & Davenport, 1985; Holton et. al., 2001; Merriam et al., 2007). According to the goals and purposes of Adult Learning, the andragogical model can be combined to other models and perspectives to be optimized (Holton et al., 2001). Andragogy is a learning framework, which may be employed for the purposes of advancing individual, institutional, or societal growth (Knowles, 1981; 1984; Holton et. al, 2001; Kaufman & Carron, 1980).

Together with Andragogy, Transformative Learning (TL) is considered to be a milestone in understanding Adult Learning because it acknowledges that not only the accumulation of experience is important, but also how individuals make meaning from experiences (Merriam & Brockett, 1997; Yang, 2004). Transformative (or Transformational) Learning, despite being attributed to different authors, is primarily based on Jack Mezirow's ideas about how adults interpret life experience (Kucukaydin & Cranton, 2013; Merriam & Brockett, 1997; Merriam et al., 2007; Mezirow, 1998). Mezirow's ideas had the intention to be a comprehensive, idealized, and universal model for Adult Learning (Baumgartner, 2003c; Mezirow, 1981; 1994; 1997).

In a nutshell, Transformative Learning is the process of changing the frame of reference that defines the adults' world (Mezirow, 1997). The goal of Transformative Learning is the independent thinking of the adult learner (Merriam, 2004; Mezirow, 1997). It is based on the changes in the consciousness of the learner, with a strong cognitive focus and a mental construction of experience, inner meaning, and changes that occur therein (Merriam, 1987).

Transformative Learning raises the perspective that autonomous adults who change their life perspectives bring social change to life when new experience is assimilated and transformed by one's past experience (Cross, 1981; Bélanger, 2011; Merriam & Brockett, 1997). According to Mezirow (1994; 1998), beyond experience, in order to be transformative, critical reflection and reflective discourse are crucial components of the learning process of adults (Baumgartner, 2003c; Mezirow, 1981; 1994; Merriam, 1987; 2004).

Critical reflection happens when learners change expectations, beliefs, feelings, attitudes, and judgments, leading to meaning (Brockett & Hiemstra, 1991). Reflective discourse focus on the content, providing accurate information for learners, free from bias, and enabling them to fully participate in the learning process (Brockett & Hiemstra, 1991; Mezirow, 1994; 1997). To facilitate Transformative Learning, educators must help learners to become aware and critical on their own assumptions, and to promote the linkage among experience, critical reflection, and reflective discourse (Mezirow, 1997).

As well as Andragogy, Transformative Learning has received critiques. Scholars have questioned its epistemological assumptions; its emphasis on the individual; the lack of attention to context and culture; the emphasis on rationality; and the scant attention to the importance of feelings and intuition (Brockett & Hiemstra, 1991; Percy, 2005). In addition, because Transformational Learning is highly based on cognitive functions, it imposes cognitive preconditions for participants' learning (Merriam, 2004).

Andragogy and Transformative Learning are the most known and used set of principles to explain Adult Learning, but there are others (Brookfield, 1986; Knowles, 1984; Merriam, 1998). Brookfield (1986), for example, has identified six principles for Adult Learning: (i) participation in learning is voluntary; (ii) effective practice is characterized by respect among participants; (iii) facilitation is collaborative; (iv) reflection and action are the core of effective

facilitation; (v) facilitation in adulthood aims to foster reflection; and (vi) the main objective of facilitation is to nurture self-direction in learning.

Another famous attempt to explain the adult learning process, Cross' Characteristics of Adult Learners (CALs), was a broad model that defined the personal and situational characteristics that distinguish children from adult learners (Merriam, 1987; 1998; Merriam et al., 2007). Together with Andragogy, CALs was a tentative framework to accommodate knowledge about adults as learners (Cross, 1981).

The list of attempts to explain the learning process in adulthood is long (Knowles, 1984). It also includes the called critical theories of learning, like critical theory and feminist pedagogy: all critical perspectives of theory, research, and practice of Adult Learning that relate to the concepts of empowerment, freedom, and emancipation (Merriam et al., 2007; Merriam & Brockett, 1997).

The emphasis of Adult Learning principles varies according to the purpose of learning (Knowles et al., 2015). According to Merriam & Brockett (1997), Knowles considered that adult learning had two major purposes: individual growth and social change. Beder (1989) considered promotion of personal growth as the main purpose of adult learning (which included leisure), but he also identified other purposes as well: to facilitate change in a dynamic society; to support and maintain social order; and to promote productivity. By its turn, Human Resources Development (HRD), mostly applied in organizational settings, emphasizes the purpose of performance improvement (Holton, 2002; Jacobs, 2006; Swanson & Holton, 2009).

The HRD perspective, most employed in organizational settings, has received critiques by scholars and practitioners from the educational field (Holton, 2002; Swanson & Holton, 2009). Some scholars claimed that HRD is exploitive of the capitalist market (Fenwick, 2002). Critiques include allegiance to the human capital theory; the promotion of exclusion; inequity;

injustice; human deprivation and degradation of employees; and that HRD subjugates human knowledge, skills, relationships, and education by organizational gains (Belzer, Bierema, Cseh, Ellinger, Ruona, & Watkins, 2001; Fenwick, 2002; Hatcher & Bowles, 2006). Myths include that the performance approach praised by HRD is deterministic; ignores learning and growth; is abusive to individuals; and is short-term focused (Reio, 2013).

For other scholars, critiques over the HRD perspective of Adult Learning are either ironic or the result of misunderstandings and/or gross errors on the concept of performance itself (Belzer et al., 2001; Holton, 2002; Swanson & Holton, 2009). They argue that the educational and the performance improvement perspectives have more similarities than differences since both share the same philosophical and practical concerns (Belzer et al., 2001; Reio, 2013; Ruona, 2016).

Among the various attempts to define HRD, Garavan's approach has driven the discussions about it (McCracken & Wallace, 2015; Mitsakis, 2017). According to Garavan (2007), HRD is a "multi-level concept whose contribution to the organization is to enhance performance in the long-term." (p.11). The role of HRD is related to aligning learning initiatives to the organizational mission (Sahoo & Sahoo, 2012; Torraco & Swanson; 1995). Considering the different attempts to define HRD and the apparent dichotomy of the educational and performance perspectives, Chalofsky (1992) has proposed a unifying definition of HRD, comprehensive of its different aspects, with focus on Adult Learning:

"Human resource development is the study and practice of increasing the learning capacity of individuals, groups, collectives, and organizations thorough the development and application of learning-based interventions for the purpose of optimizing human and organizational growth and effectiveness." (p. 179).

Whereas the theoretical debate over the perspectives of Adult Learning, HRD is extensively concerned with practice (Tseng & McLean, 2008). It encompasses a clear

articulation of learning and organizational efforts, requiring that professionals in charge of the organizational learning efforts are completely absorbed by the purposes of the organization (Anderson, 2009; Clardy, 2008; Garavan, 2007; Garavan & Carbery, 2012; Linkow, 1985; McCracken & Wallace, 2000). In other words, HRD is essential to achieve organizational purposes under the broader umbrella of Adult Learning.

Needs Assessment

In many organizations, strategy is unknown, nonexistent, or exclusively related to financial gains (Kaufman, 2006; 2011; Linkow, 1985). According to the HRD perspective of Adult Learning, the blatant lack of coherence between learning initiatives and organizational efforts inhibits both the success of the learning efforts as well as the achievement of the organizational purposes (Garavan, Costine, & Heraty, 1995; Kaufman & Lick, 2005). According to this perspective, for learning to happen it is important to guarantee that all organizational efforts are headed in the same way (Kaufman & Guerra-López, 2013). Needs Assessment is a tool that promotes alignment between learning and organizational efforts, a vital step in performance improvement (Gupta, Sleezer, & Russ-Eft, 2014; Kaufman & Guerra-López, 2013).

The literature does not offer a unanimous definition of needs assessment and there is much confusion among the use of the terms ‘needs assessment’ and ‘needs analysis’, front-end analysis, training needs analysis, demand analysis, and others (Watkins et al., 1998). According to Watkins, Meiers, and Visser (2012), needs assessment is simply a tool for making better decisions, benefiting from the collection of information and the systematic application of information to the process of decision making. It provides a process for identifying and prioritizing gaps between current and desired results, relying, for that, on a

broad set of tools and techniques for collecting information and making decisions (Watkins et al., 1998; 2012).

Advantages of employing needs assessments include having justification for decisions before they are made; being scalable for any size project, time frame, or budget; being a replicable model that can be applied by novices or experts; and having interdisciplinary solutions to complex problems (Lucier, 2008; Watkins et al., 2012). Because needs assessments can provide systematic information to decision makers, it can be used proactively to improve performance and reactively in response to problems, avoiding costly mistakes and decisions made upon judgement, intuition, precedents or authority (Kaufman, 2006; Lucier, 2008; Watkins et al., 2012).

Needs assessments identify the gaps in results; prioritize them; and select the most important for the problem to be solved (Altschuld & Watkins, 2014; Kaufman, Stakenas, Wager, & Mayer, 1981). Prioritization may be on the costs of implementing or ignoring them; size of discrepancy; attainability; and perceived value, among other relevant criteria for each organization (Altschuld & Watkins, 2014; Rossett, 1982). Needs assessments do not analyze the causes of the gaps – which is the main function of needs analysis (Chyung, 2008; Kaufman, 1989; Kaufman & Valentine, 1989). Needs analysis is the following step, after the needs assessment, which aims to provide causal factors for the identified gaps (Kaufman, 1986; Kaufman & Guerra-López, 2013).

Needs assessments also may not be confounded with evaluations (Altschuld, 2004; Brookfield, 1986; Chyung, 2008; Kaufman, 1989; Kaufman & Valentine, 1989). Despite similar they are not the same, serving different functions (Watkins et al., 2012). While needs assessments allow the identification of what is working, what should be added, what should be deleted or modified, and its prioritization in order to make better decisions, evaluation is

most commonly applied when decisions about what to do have already been made, in order to determine whether the current results match the expected ones (Kaufman, 1989; Kaufman & Guerra-López, 2013; Watkins et al, 2012).

Virtually all authors recommend conducting needs assessments as the first step for any learning initiative, and there are many models for implementation (Altschuld, 2004; Barker Steege, Marra, & Jones, 2012; Brookfield, 1986; Gupta et al, 2014; Holton, Baques, & Naquin, 2000; Leigh, Watkins, Platt, & Kaufman, 2000; Trimby, 2009). Some derive from the educational field such as instructional design and curriculum development field; others from organizational management and managerial planning (Leigh et al., 2000; Stewart & Cuffman,1998). With a history that can be traced to the 1950's, the different models of needs assessment, none of them correct or incorrect, may vary significantly according to two variables: (i) the establishment of discrepancies; and (ii) the understanding of which level of the organization the needs assessment's results should focus on (Kaufman, 1977a; 1977b; Moore & Dutton, 1978; Watkins et al., 1998).

The first variable used to distinguish needs assessment models – discrepancies - encompasses most of the models which identify, measure, and prioritize inconsistencies between the 'What Is' and the 'What Should Be' status at the strategic, tactical, and operational levels (Lee, Altschuld, & White, 2007; Trimby, 1979; Witkin, 1977). There are also models based on deficiencies, which do not establish priorities, only ranking or stating the identified gaps (Trimby, 1979). These models are more concerned with the decision-making process than solving problems (Kimpston & Stockton, 1979; Trimby, 1979). A third group of models is based on appreciative inquiry which, according to Watkins et al. (2012), understands needs assessment "as a process for engaging people across the performance system so they can build

organizations, programs, and projects around what works, rather than exclusively focusing on trying to fix what doesn't" (p. 62) (Trimby, 1979; Witkin, 1977).

The second variable used to distinguish needs assessment models are the levels of the organization which the results of the needs assessment should focus on. Although some pioneer models like Thomas Gilbert's considered that needs assessment results should focus on external levels such as the environment, most of needs assessment models focus on the organizational and individual levels (Gupta et al., 2014; Robinson & Robinson, 1998; Watkins, 1998).

Among the most used needs assessment models, the Robinson and Robinson's (1998) focused on three levels of the organization: business, performance, and work environment and capability. Their model emphasized the non-training solutions as a way to improve organizational performance along with learning solutions (Leigh et al., 2000). According to the Robinson and Robinson's model, needs are present in all organizations – for profit, not for profit or government - regardless of how they are called (Robinson & Robinson, 2008).

The Rumlér and Brache's (2012) model emerged as a holistic approach to needs assessment (Gupta et al., 2014; Kaufman & Guerra-López, 2013; Leigh et al., 2000). The authors have also broken down the performance perspective into three different organizational levels: organization, process, and job/performer level. These three levels are interdependent, they must have the same objectives and processes to work efficiently, and they all contribute to the accomplishment of organizational purposes (Christensen, 2018; Rumlér & Brache, 2012; Robinson & Robinson, 1998).

The Watkin's model considered needs assessment in three phases: preassessment, assessment, and post assessment (Altschuld & Watkins, 2014). This model formally missed

the concerns with societal and organizational levels, which are assumed to flow from other levels such as individuals’ and small groups’ (Watkins et al., 1998).

The above-described models are examples of some of the most known needs assessment models. Among the models, the Organizational Elements Model (OEM) proposed by Roger Kaufman (1981) is not only the pioneer but also the only one model that addresses the gaps at the societal level (Christensen, 2018; Chyung, 2008; Hannum & Kaufman, n.d.; Kaufman, 1989, 2009; Leigh et al., 2000; Ley, Driscoll, & Kaufman, 1990; Watkins et al., 1998; Witkin, 1977). It is based on the identification of discrepancies between the ‘What Is’ and the ‘What Should Be’ status at all levels of the organization, including the societal level (Altschuld, 2004; Chyung, 2008; Kaufman, 1981, 2009; Kimpston & Stockton, 1979; Witkin, 1977; Watkins et al., 1998).

Table 2.1: Comparison of multidisciplinary models of Needs Assessment characterized by Results’ Focus

Mega (society)	Macro (organization)	Micro (individual/ small group)	Process (efforts and activities)	Input (resources)	Model
					Kaufman (1992, 1998)
					Robinson & Robinson (1995)
					Rummler & Brache (1990)
					Witkin & Atlschuld (1995)

(Adapted from Leigh et al., 2000, p. 89)

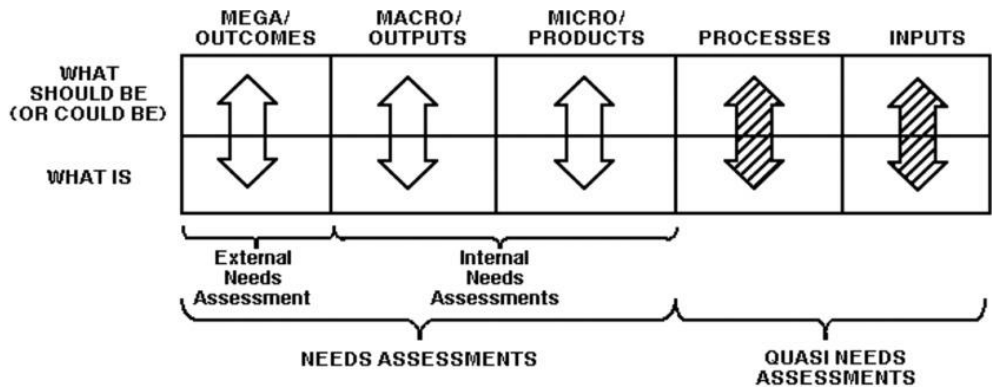
The OEM offers the linkage among results at all organizational levels by comprising five organizational elements: Inputs, Processes, Products, Outputs, and Outcomes (Kaufman, 1981; 2011; Ley et al., 1990). These elements are part of any organization, and for each element there must be a level of planning (Kaufman, 1989, 2005a; 2018a; Ley et al., 1990). Among the organizational elements, Inputs and Processes are considered means; and Products, Outputs and Outcomes are considered ends (Kaufman & Valentine, 1989).

Kaufman (1981) defined means as the ways to achieve the ends, such as activities, processes, programs, projects, service and researching; and ends as the results, consequences, impacts, and payoffs of the organization (Kaufman, 2011; Kaufman & Guerra-López, 2013). Means and ends are equally important to achieve the purposes of the organizations, and they must be aligned (Chyung, 2008; Kaufman, 1981; 2009). According to Kaufman (1989, 2005a; 2011; 2018a), the description of the organizational elements is the following:

- Inputs: people, objects, energy, time, and capital for induction to the organization;
 - Processes: ways of achieving results;
 - Products: result of the Processes;
 - Outputs: direct results of Products, delivered to the clients of the organization;
- and
- Outcomes: the social impact, results from the production, delivery, and consumption of organizational services.

When the gap between the ‘What Is’ and the “What Should Be’ status is related to results, it is called a ‘need’ – as a noun, not a verb -; when it is related to Inputs or Processes, it is called a ‘quasi-need’ (Kaufman et al., 1981; Kaufman & Valentine, 1989).

Figure 2.1: The OEM



(Kaufman, 2006, p. 125)

The OEM is comprehensive because, different from other needs assessment models, it describes a total system (or a system of many parts), representing what the organization uses, does, produces, delivers, and externally contributes to (Kaufman, 2006; 2011). The OEM considers the needs of the surrounding community, adding value to the society in the form of survival, self-sufficiency, and quality of life of people (Chyung, 2008; Kaufman, 2009; 2019). According to the OEM, the learning needs must be defined at the societal level first (Mega level), deriving to the organizational level (Macro level), and lastly to individuals' level (Micro level) (Altschuld, 2004; Chyung, 2008; Devkota, 2019; Kaufman, 2006; 2018b; Kaufman & Carron, 1980; Kaufman & Christensen; Leigh et al., 2000; Ley et al., 1990).

The Mega level provides a safe, moral, ethical, and business compass to move toward a better tomorrow by considering the importance of both internal and external stakeholders (Kaufman, 2005b; 2006; Kaufman & Guerra-López, 2013; Kaufman & Lick, 2005; Leigh et al., 2000). It provides a shift from individuals to make sure that the whole organization adds value to society (Kaufman, 2006). The Mega level is representative of the societal mission, expressed in terms of an Ideal Vision that defines the world that all partners commit to work toward adding value for all stakeholders (Kaufman, 2005b).

Assessing internal and external key stakeholders is crucial to identify the learning needs of initiatives at the Mega level and align them to organizational efforts (Kaufman, 2011; Kaufman & Guerra-López, 2013; Linkow, 1985). Stakeholders, either internal or external, can offer different perspectives of the phenomena assessed and may not always agree, but they can bring clarity to the process and may provide a common understanding of the problem (Hannum & Kaufman, n.d.). Garavan (2007) considered that management commitment are critical internal stakeholders to a successful implementation of learning initiatives since they cannot be integrated into organizational strategies if senior management does not want it to happen (Garavan, Costine, & Heraty, 1995; Sahoo & Sahoo; 2012). Top management should become leaders when implementing learning initiatives by considering all learning implications in their seek for achievement of organizational results (McCracken & Wallace, 2000). By its turn, external stakeholders are essential for understanding the challenges involved at the Mega level and identifying possible resistance to embraced it (Kaufman, 1977b; Kaufman & Lick, 2005; Ullmer, 1986). The assessment of external needs is necessary to connect the people within the organization to the reality of people outside the organization, aligning internal efforts to external value (Christensen, 2018; Kaufman et al., 1981).

Needs assessment models have received critiques along the time, including the OEM (Altschuld & Watkins, 2014). According to Kamis (1979), since needs assessments cost money, time, and energy, they should have a reasonable payoff. The author argued that needs assessments should be natural first steps when implementing any learning initiative, but they are frequently conducted retrospectively to justify a program, in an ambiguous construct of wishes; and they do not explain the complex problems of public and social policies (Kamis, 1979). Other critiques of needs assessment include being top-down, outside-in, and a not collaborative journey, concerned primarily with quantitative needs (Altschuld & Watkins,

2014); being idealistic, not realistic; presenting a reductionist approach; and being so rigid that rigidity becomes a weakness (Ullmer, 1986).

Despite critiques, the OEM has received much attention for the Adult Learning literature, and it has been considered to be a proactive approach in the sense that it assumes nothing about the current status of the organization (Hannum & Kaufman, n.d.; Kaufman, 1989; 2005a). It embraces a shared success throughout all levels of the organization, taking the impact for society as a public good (Hannum & Kaufman, n.d.; Kaufman, 1989; 2005a). The employment of the OEM is particularly appropriate when the organization recognizes that what it produces and delivers should be aligned to value added to society, with a primary focus on creating the world for future generations (Kaufman & Guerra-López, 2013).

Financial Literacy

There are solid understanding that economic and financial issues are relevant to individuals' financial success and to the proper functioning of markets (Apostoaie, 2010; Fluch, 2007; Gnan et al., 2007, Minehan, 2006). As a consequence, a growing number of central banks around the world have embraced financial education initiatives (Apostoaie, 2010; Fluch, 2007; Minehan, 2006). Consumers with a better understating of Economics and Finance can more easily grasp monetary issues and transfer its understanding to the policies issued by central banks (Fluch, 2007). In addition, an informed population is more likely to understand and accept the rationale behind the decision of central banks and their purposes (Minehan, 2006).

Although Financial Literacy and Financial Education have been studied for decades (Pinheiro, 2008), it was only after the financial crisis of 2008 that these topics gained greater attention from policy makers and researchers. The financial crisis evidenced that, collectively,

individual financial decisions could have a significant impact on the economy and the financial system (Klapper et al., 2012). The maintenance of financial stability and currencies' purchase power is part of the mission of most central banks around the world, which results benefit societies (Hastings et al., 2012; Kaufman, 2018). Because of that, central banks have embraced the responsibility of delivering financial literacy as part of mission for society (Fluch, 2007; Minehan, 2006).

A few central banks include educational goals in their mandates, but most of them clearly reflect the commitment to learning in their organizational goals, tasks, activities, mission statements, and core competencies (Apostoaie, 2010; Araujo & Pimenta de Souza, 2012; Fluch, 2007; Hogarth, 2006). Competitive advantages of central banks over other institutions to deliver financial literacy rely on their natural know-how on the topic and on the expectation that central banks provide neutral and reliable information (Bholat, Kowalski, & Milward, 2015; Gnan et al., 2007; Morris, 2018). Central banks have been developing different strategies to promote financial education by creating awareness of the need to enhance citizens' basic financial literacy; improving access to information about financial issues; spreading the information for consumers protection purposes; and developing and improving citizens' understanding of basic economic concepts (Fluch, 2007).

It has been in a worldwide complex context that financial education was raised as one of the most suitable solutions to a myriad of complex economic and social problems (OECD, 2005). Still, there is no scholarly agreement on the effects of investing in it (Hastings et al., 2012). Most authors argued that there are no collateral nor negative effects in promoting financial literacy but there are those who advocate that investing in financial education may bring prejudices to population (Fernandes, Lynch, & Netemeyer, 2014; Hastings et al., 2012; Hung et al., 2009; Willis, 2008). Terminal conclusions are scarce, but there are plethora of

data indicating positive correlations between financial literacy and better financial decisions, supporting the advocacy for more investments in financial education (Carpena et al., 2017; Hastings et al., 2012).

Financial literacy levels are low in most countries, economically developed or not (Hung et al., 2009). Higher national income levels do not equate to a more financial literate population (Lusardi, 2019). Only one third of the global population has familiarity with basic concepts that underlie everyday financial decisions (Lusardi, 2019). Among adults, the rate is even lower: on average, half of adults are unable to achieve the minimum scores regarding financial behavior, financial knowledge, and financial attitudes (OECD 2020).

The role of experience seems to be most important when being financially literate. According to Hastings et al. (2012), studies showed that half of population cites personal experience as the most important aspect when learning financial issues, and only 1/5 cites formal education as having a role in personal finance. However, learning by doing is not a substitutive for improving poor financial decisions (Hastings et al., 2012). People can learn from making decisions, but self-learning seems to be limited to improve financial literacy (Lusardi, 2019). There are reduced opportunities for experimental learning regarding financial issues, and this is relevant for financial education initiatives (Hung et al., 2009). Most of the literature related to the topic focuses on traditional, classroom-based courses of financial education rather than on experiential and informal learning (Hastings et al., 2012).

To design learner-centered financial education initiatives, it is necessary to consider the intended audience and the specific features to attend it (Hogarth, 2006; Holton et. al, 2001). Initiatives to deliver financial literacy need to be tailored, to have clear objectives, and be, at the same time, large and scalable (Lusardi, 2019). To overcome these challenges, organizations should start top-down, with engagement of top senior executives and a wide array of

audiences; with collaboration as much as possible, boosting the topic into other organizations; and making it fun, reinforcing the idea that Economics and Finance are not ‘the dismal science’ (Araujo & Pimenta de Souza, 2012; Fluch, 2007; Minehan, 2006).

Central banks’ processes to deliver financial literacy may be broad and they include seminars, workshops, lectures, distribution of printed and digital materials, programs for teachers and academics, and websites (Fluch, 2007; Roa et al., 2014). Among them, the maintenance of museums is the most elemental effort of central banks when delivering financial literacy (Fluch, 2007; Kampmann, 2013; Morris, 2018). According to Kampmann (2013), “a money museum serves to strengthen national identity because nothing unites a nation more than the currency it has in common” (p.2).

To financially educate the population is a longitudinal goal: skills are developed overtime and people need to look from past to immediate future and know the implications over long periods (Harris, 2013; Lusardi, 2012). Money museums provide a powerful learning tool to support such strategy (Harris, 2013; Lusardi, 2012). They are perfect places to provide initiatives that facilitate appreciation of the power, responsibility, and benefits that Money can bring (Lusardi, 2012). However, to become successful in this endeavor, money museums require special features, new methods, new approaches and the formulation of new questions (Harris, 2013; Kampmann, 2013).

Learning in Museums

The existence of museums is not recent, but it was in the beginning of the 20th century that the number of museums increased along with the number of visitors and the variety of museum’s collections (Clover et al., 2010). The learning role of museums had a growing trajectory, fighting in the beginning, with other primary goals such as aesthetic appreciation

and social responsibility, without certainty if museum visitors truly learned in their visits (Falk & Storksdieck, 2005a; Grek, 2009; Hein, 2006b). The recognition of the learning role of museums came only with the modern museum (Hein, 2006b). Currently, it is assumed that museums can provide robust learning experiences (Brooksfield, 1986; Falk & Storksdieck, 2005a; Hooper-Greenhill, 1994; Mirghadr et al., 2018).

The acceptance of the learning role of museums does not mean that promoting it is an easy task, especially regarding multidisciplinary themes (Dudzinska-Przesmizzki & Grenier, 2008; Dufresne-Tassé, 1992; Falk, 1999; Falk & Storksdieck, 2005a; Grenier, 2007; Reenie & Johnston, 2004). In museums, learning is not always straightforward, raising challenges to understand and measure the process (Falk, 1999). Currently, learning in museums is part of the concern of curators, exhibitions designers, and other museum professionals, who deal with a broad range of learning activities such as conferences, community events, fieldtrips, workshops, partnerships with universities and centers, websites, film series, and tours (Dudzinska-Przesmizzki & Grenier, 2008; Hein, 2006b; Monk, 2013).

Despite the old recognition of the learning function of museums in the beginning of the 1900's and the development of Adult Learning as a field of study since the 1920's, studies regarding Adult Learning in museums were nonexistent until the 1970's and they have not received yet the consideration they deserve (Beder, 1989; Dufresne-Tassé, 1995; Grek, 2009; Hein, 2006b; Kelly, 2007; Monk, 2013; Sachatello-Sawyer & Fellenz, 2000). The body of knowledge regarding museums as centers for adult learning is still limited and underrepresented in literature, with few available studies about it (Clover et al., 2010; Dufresne-Tassé, 1992;1995; Grenier, 2007; McCray, 2016). Most of the studies conducted in museums are targeted to children, although it is known that the adoption of Adult Learning

principles strengthens the field's' practice (Grek, 2009; McCray; 2016; Sachatello-Sawyer & Fellenz, 2000).

The first studies about learning in museums were a-theoretical (Hein, 2006b). Because the learning role of museums has been limited in its historical and theoretical backgrounds, learning theories from the general educational field have been borrowed as a way to better understand the learning process of museums visitors (Dierking, 1991; Dufresne-Tassé, 1992; Falk & Storksdieck, 2005a; Grenier, 2007; Hein, 2006b). Among them, Experiential Learning has been widely applied to learning in museums (Beard, 2018; Hein, 2006b; White, 2005).

Experiential Learning is grounded on the idea of accumulation of experience as a key aspect of human learning (Beard & Wilson, 2013; Jarvis, 2010; Merriam & Brockett, 1997). There are different schools and a variety of definitions involving dialogue, transformation, commitment, participation, and empowerment – seminal aspects of Experiential Learning (White, 2005). But there is a virtual agreement that the various approaches to Experiential Learning have roots on the ideas of the progressive educator John Dewey whom, beyond influencing the field of museum learning with his theories, he himself was an avid museum visitor, promoting connections among educational theories and museums (Hein, 2006b; Hein 2013; Jarvis, 2010; Kolb & Yeganeh, 2012; Merriam & Brockett, 1997; Monk, 2013; Moore, 2010; White, 2005).

Despite many scholars have explored the importance of experience for learning, including Knowles' Andragogy and Mezirow's Transformative Learning, it was David Kolb who turned popular the concept of Experiential Learning and generalized it by emphasizing experience as the centrality of the learning process (Beard, 2018; Eickmann, Kolb, & Kolb, 2004; Jarvis, 2010; Kayes, 2002; Kolb, 1984 2009; Merriam & Brockett, 1997; White, 2005).

According to Kolb (1984), Experiential Learning can be defined as the “process whereby knowledge is created through the transformation of experience” (p. 41).

Kolb’s theory on Experiential Learning has two levels: a four-stage learning cycle and four separate learning styles (McLeod, 2007). The learning cycle describes how experience is translated into concepts, which in turn are used to guide new experiences (Kolb, 1981; Kolb & Yeganeh, 2012). According to Kolb (1981), learners must be able to involve themselves in new experiences without bias (Concrete Experience); observe and reflect upon experiences from many perspectives (Reflective Observation); create concepts that integrate observations into logic sound theories (Conceptualization); and be able to use these theories to make decisions and solve problems (Active Experimentation) (Jarvis, 2010; Kolb & Kolb, 2010; Kolb et al, 2000; McLeod, 2017; Merriam & Brockett, 1997; White, 2005).

The second level of Kolb’s model, the learning styles, are the result of heritage, past experience of individual, and learners’ present situation, causing emphasis in some learners’ abilities over others (Kolb, 1981; Kolb et al., 2000). By understanding the own learning style, the individual can better understand the learning process and use the most appropriate strategy, not only for educational purposes, but for life (Kolb, 1981; Kolb & Yeganeh, 2012). According to learning styles, some learners rely on senses and immersion in the world of reality to learn; while others tend to perceive and hold information through abstract conceptualization (Kolb et al., 2000). Everybody responds to all learning styles at some extent, with emphasis according to the situation. (McLeod, 2017). The four learning styles are (Kolb, 1984; Kolb et al, 2000; Kolb & Yeganeh, 2012; McLeod, 2017):

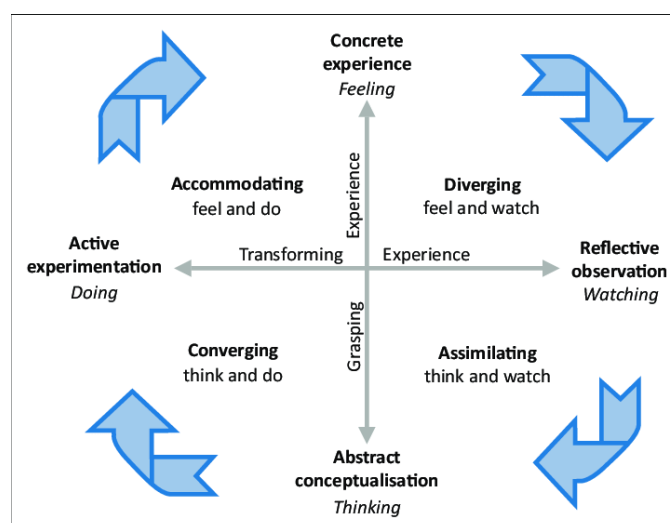
i) Diverging (feeling and watching): learning occurs from concrete situation from different points of view, and it is emotional. Learners from this style prefer ideas generation;

ii) Assimilating (watching and thinking): learning occurs in a concise, logical form. Learners from this style require a good clear explanation rather than a practical opportunity and prefer readings, lectures, and to have time to think;

iii) Converging (doing and thinking): learning occurs from finding practical uses for theoretical ideas. Learners from this style prefer experiments, simulations, and practical applications; and

iv) Accommodating (doing and feeling): learning occurs from intuition rather logic. Learners from this style prefer hands-on experiences.

Figure 2.2: Kolb's Model of Experiential Learning



Adapted from Kolb, (1984). Retrieved from: Van der Horst & Albertyn (2018).

Despite the acknowledged contribution of Kolb to Experiential Learning, the model is not free critiques (Kayes, 2002; Kelly, 1997). In fact, the main reason of being so popular – simplicity – is the root of most critiques, either empirical or theoretical, on both learning cycle and learning styles (Jarvis, 2010; Kayes, 2010). Critiques to the learning cycle include: i) the lack of goals, purposes, intentions, choice, and decision making elements (Kelly, 1997); ii) being over rational and lacking sensitivity for emotional and unconscious matters (Kayes,

2002; White, 2005); iii) underestimating the power of social relations, such as status, gender, and culture (Beard & Wilson, 2013; Kayes, 2002); iv) the difficulty of linking it to complex areas of technology (Beard & Wilson, 2013); v) being inadequate as a means of providing new knowledge about the world (Beard & Wilson, 2013); vi) lacking philosophical ground (Beard, 2018); and vii) not exploring the relationship between learning and knowledge (White, 2005).

Regarding learning styles, the main critique is that it is a self-diagnostic tool, whereby learners rate themselves (Beard & Wilson, 2013; Kayes, 2002; Kelly, 1997). According to Kayes (2002), most of critiques are simplistic reductions of Kolb's work. His model of Experiential Learning is spread in many educational practices and other aspects of life (Beard 2018; Kayes, 2002). For example, according to Beard and Wilson (2013), the value of experience in society seems to be applicable even to financial literacy, where difficult lessons tend to be learned subsequently by each succeeding generation.

When applied in museums, Experiential Learning is related to engaging, involving, and entertaining (Madsen & Jensen, 2021). The embracement of Experiential Learning by museum exhibits creates enlightenment, and when complex information is presented, stimulating individuals mentally and with other senses, the experience provided becomes intrinsically rewarding, motivating the learner to pursue further learning (Madsen & Jensen, 2021). As learning spaces, museums may influence human behavior and human learning by its physical features, providing learners the opportunity to commit themselves to learn, develop, and grow (Kolb & Kolb, 2010). Experiential Learning in museums allow learners to achieve deep learning through the integration of intellectual, physical, moral, and spiritual values (Kolb & Kolb, 2010).

The principles of Andragogy have also been applied to the contexts of museums (Dufresne-Tassé, 1995). However, while some authors claimed that the andragogical

principles orient museum activities, other claimed that they are inadequate to be employed since museums are not places for adult learning (Dufresne-Tassé, 1995). Despite divergences, the principles of Andragogy ground an important approach of adult learning in museums: Informal Learning (Dudzinska-Przesmittycki & Grenier, 2008).

Museums have been long considered distinguished informal learning spaces where some of the richest learning experiences occur (Dudzinska-Przesmittycki & Grenier, 2008; Kelly, 2007; Mirghadr et al., 2018; Monk, 2013; Shepherd, 2016; Tišliar, 2017). Informal learning happens outside the formal education system where people have the need, the motivation, and opportunity for learning (Marsick & Watkins, 2001; Taylor & Neill, 2008). It is predominantly experiential, usually not intentional and noninstitutional, but structured (Marsick & Watkins, 2001; Marsick, Volpe, & Watkins, 1999). It is integrated with routines, triggered by an internal or external jolt; involves reflection and action; is driven by people's choices, intentions and preferences; and is linked to the learning of others (Marsick et al., 1999; Marsick & Volpe, 1999).

Informal learning can occur in many different ways and there are several studies connecting learning to collaboration, creativity, and problem-solving abilities (Kim et al., 2016). Museums are considered unique informal learning places for all ages with advantages over others because they respect the individuals' rhythm, preferences, curiosity, and intimacy (Dudzinska-Przesmittycki & Grenier, 2008; Kunstgespräche, n.d.). As informal learning places, museums provide contexts that allow learning to grow from everyday encountering, helping people to recognize their beliefs and to connect to their feelings, enhancing the learning process (Marsick & Watkins, 2001; Shepherd, 2016, Osborne, 1998). The learning contexts provided by museums allow individuals to compare the learning situation with their prior

experience and to decide about bringing the new things learned to life or not, turning them into adequate opportunities for learning (Way, 2014; Marsick & Watkins, 2001).

Despite the general agreement that museums are places of informal learning, museums are complex learning environments that often lack theoretical clarity and definition, a problem that is not solved by simplistic solutions (Chang, 2006; Falk, 2004; Osborne, 1998). Most of the attempts to explain learning in museums focuses on museum visitors, but this is an insufficient condition (Roeder & Filser, 2018; Osborne, 1998). There are few attempts to measure and explain the learning process in the museum in a broader way, considering the whole museum experience (Roeder & Filser, 2018; Osborne, 1998).

The Interactive Experience Model, developed by John Falk and Lynn Dierking (2000), was one of the few attempts and the cornerstone in conceptualizing the learning experience in museums (Falk, 2004; Falk & Dierking, 2000; Rennie & Johnston, 2004; Roeder & Filser, 2018). Developed in 1992 and improved along the following years, the model considered not only the museum visitor's perspective but three contexts: personal, social and physical (Falk & Dierking, 2000). Currently intitled Contextual Model of Learning, Falk and Dierking's (2000) learning in museums model has incorporated time as an important variable of learning. The three dimensions and time represent the dialogue between the learner and the environment through time, always changing across lifetime (Falk & Storksdieck, 2005b). According to the authors, time has been added because learning is not an instantaneous phenomenon, but a cumulative process (Falk & Storksdieck, 2005b).

The personal context described by the Contextual Model of Learning includes personal and genetic history of the museum visitor, such as experience, background, interests, motivations, and skills (Falk & Storksdieck, 2005a; Rennie & Johnston, 2004). It encompasses five key factors: visit motivation and expectations, prior knowledge, prior experiences, prior

interests, and choice and control (Falk & Storksdieck, 2005a; 2005b; Falk & Dierking, 2000). Deriving from social learning theories, the social context refers to learning as a result of social interactions and the opportunity to learn from each other (Falk & Dierking, 2000; Maxwell & Evans, 2015). It encompasses interactions among people during the visit and within the community (Falk & Dierking, 2000; Falk & Storksdieck, 2005a; Rennie & Johnston, 2004). The physical context refers to physical environment of museums. According to Falk and Dierking (2000), the key factors of physical context are advance organizers; orientation; architecture; design and exhibitions; and reinforcement of the experience outside the museum (Falk & Dierking, 2000; Falk & Storksdieck, 2005a; 2005b; Rennie & Johnston, 2004).

The three contexts of the Falk and Dierking's model interact and overlap (Falk & Storksdieck, 2005a; Rennie & Johnston, 2004). Together, they are more of a broad framework than a model per se, leading many scholars to adopt it when explaining the learning process in museums, even under other labels (Ansbacher, 1998; Chang, 2006; Dudzinska-Przesmitty & Grenier, 2008; Falk & Storksdieck, 2005a; 2005b; Mirghadr et al., 2018; Rennie & Johnston, 2004). In this sense, personal context may be found in the literature under the label of 'Audience' or 'Visitors'; social context may be found under the labels 'Interaction' and 'Facilitation'; and physical context is widely spread in the literature encompassing diverse physical features of exhibits and programs, including the use of technology and the organized support for museum visits.

According to personal contexts of learning in museums, people learn in different ways and have different personal stories, thus creating a unique museum experience for each visitor is challenging (Hein, 2006b; Hohenstein & Moussouri, 2017; Kelly, 2007). Museum professionals strive to understand and employ features tailored for museum visitors' needs, especially for adults (McCray, 2016). Understanding and responding to visitor's needs

enhances the quality of the museum experience, what explains the increase in the number of studies attempting to better understand museum features (Falk, 2008).

Knowing the audience is vital to understand the interests, expectations, and desires of museum visitors to create a sense of unexpected, especially important for adults (Dudzinka-Przesmitzki & Grenier, 2008; Falk & Dierking, 2000; Falk, Moussouri & Couldon, 1998; McRaney, 2008; Scott, 2010). Experience of children, teenagers, and adults in museums is different, and awareness of these differences potentialize engagement and meaningfulness for visitors (Jensen, 1994). Getting to know the audience includes demographic variables but it is not limited to it (Chang, 2006). Museum visitors come with cognitive and emotional baggage that affects the learning experience (Dudzinka-Przesmitzki & Grenier, 2008). For example, there are different studies that evidence that pre-visit visitor's agenda deeply affects the learning process in museums (Dudzinka-Przesmitzki & Grenier, 2008; Falk et al., 1998; Grek, 2009; Spock, 2006).

Regarding adults' motivations to go to museums, they include education, entertainment, social event, life cycle, and practical issues (Falk & Dierking, 2000; Falk et al., 1998; Gunther, 1994). Among them, education and entertainment are the most cited reasons by adults to go to museums, and despite the apparent conflict, in fact, there is no conflict between these two reasons (Ansbacher, 1998; Falk & Dierking, 2000; Falk et al., 1998.) On the contrary, adult learning in museums involves engagement through the creation of enjoyment and entertainment (Grek, 2009; Mirghadr et al., 2018; Roederer & Filser, 2018). This happens because the understanding of learning in museums is broad enough to include enjoyment, satisfaction, and other attributes (Hein, 2006b).

Regarding social contexts, different studies demonstrate that museum visitors are strongly influenced by interactions and collaboration (Falk & Storksdieck, 2005a). Although

difficult to estimate, even a solitary visitor may learn from watching or listening to others, reinforcing the belief that people learn from each other (Kelly, 2007; Mirghadr et al., 2018; Rennie & Johnston, 2004). Interactions and collaboration among visitors modify the pace and focus of the visit, impacting the learning process in museums (Ansbacher, 1998; Jeffery-Clay, 1998).

The social context carries some cultural challenges. Museums have been criticized for having a negative image of being elitist and paternalist, ostracizing some layers of society (Bell & Clover, 2017; Chang, 2006; Falk, 1999; Kim et al., 2016). Museums have also been charged of being racist, sexist, and homophobic (Bell & Clover, 2017; Falk, 1999). In addition, museums are often perceived as places of educated people, formal, with almost no workers as visitors (Chang, 2006; Clover et al., 2010; Grek, 2009). To worsen it, some museum habits and features end up reinforcing this stigma, such as the constrained talks and the climate of order and silence (Clover et al., 2010).

At last, regarding physical contexts, despite the traditional focus of museum studies on exhibits, physical environments are the most neglected aspect when discussing the learning process in museums (Dierking, 1991; Falk, 2006; Maxwell & Evans, 2015). The key features of physical contexts, as described by Falk and Dierking (2000) (advance organizers; orientation; architecture; design and exhibitions; and reinforcement of the experience outside the museum), influence the learning and impact the affective memory of the visit (Falk & Dierking, 2000; Falk & Storcksdieck, 2005a; Jeffery-Clay, 1998). Therefore, museum professionals should learn more about the effects of physical environments on the learning process (Dierking, 1991).

According to Falk and Dierking (2000), consistent planning is part of the physical context and crucial for organization and orientation of museums (Tišliar, 2017). Knowing the

personal context of visitors may help museum professionals to plan and design features that are aligned to the purpose/needs of the visitors and organizing and orienting the visits according to their needs (Mirghadr et al., 2018; Monk, 2013; Rennie & Johnston, 2004). In addition, if museum professionals embrace the idea that museum's intentions are not always aligned to what visitors really learn, planning and building an organized network of learning support may be necessary to improve adult learning in museums (Hein, 1993).

Regarding organization and orientation in museums, which include the embracement of SDL, opinions are divided into those authors who find that SDL is primarily found in museums and those who argue that SDL is not much found in museums (Dudzinska-Przesmierzki & Grenier, 2008; Grek, 2009; McCray, 2016). The literature has paid little attention to the connection of SDL and museums, and the unfinished discussion only reinforces their relationship (Banz, 2008; Brocket and Hiemstra, 1991). Authors who advocate for the full embracement of SDL in museums argue that guidance at museums work as worship, excluding the opportunity of own reflection of adult learners (Clover et al., 2010). According to this perspective, guidance on the learning process is perceived as discouragement of the learner's engagement, leaving little room for critical reflection (Clover et al., 2010). Museums should be, by nature, self-explanatory; should promote autonomous learning; and immediately apply the learning (Banz, 2008; LEM, 2012).

On the other hand, there are authors who advocate that looking for answers in museums is not an easy task because, without help and being self-directed, visitors may have to discover things by themselves, possibly feeling insecure and undirected (Clover et al., 2010; Dufresne-Tassé, 1992). If accepted this perspective, even adults need some guidance to learn in museums; therefore learning processes need to be planned and guided (Hohenstein & Moussouri, 2017; Shepherd, 2016). Orientation in museums include the support of learning

programs that, if carefully designed, have the potential to change adults' lives and continue to influence their decisions for years (Sachatello-Sawyer & Fellenz, 2000).

Architecture is another attribute of museums' physical contexts, which encompasses more than aesthetic aspects. It encompasses physical, intellectual, and cultural accessibility for all visitors, and adequate space for social interaction and/or reflection (Davidson, Heald, & Hein, 1994; 2006b; Maxwell & Evans, 2002). Children and adults are affected differently by the surroundings (like noise and crowd), so architectural features such as circulation paths, placement of doors, support for physical disabilities, and signage may contribute to distraction and feeling lost or anxiety, what may impact the learning process (Lowman, 2015; Maxwell & Evans, 2015).

Considering adults' learning needs, to allow the making of meaning, museums should include a space for adult visitors to reflect upon experience or stimulate them with questions (Dufresne-Tassé, 1992; Hein, 2006a; Monk, 2013). A pure theoretical learning approach that neither considers Adult Learning principles nor promotes opportunity to adults to make the link with their previous experience, tends to be ineffective (Hohenstein & Moussouri, 2017). When designing learning experiences in museums, architecture and exhibits must offer to visitors the opportunity for reflection and dialogue, allowing adults to make connections to previous experiences (Hohenstein & Moussouri, 2017; Maxwell & Evans, 2002; Merriam, 2008).

The museum visitor is much influenced by how exhibits are designed, altering the visit pattern (Davidson et al., 1994; Dudzinska-Przesmizzki & Grenier, 2008). Therefore, how the exhibits are conceptualized and constructed is crucial for the learning process (Hayward, 1992). Design of exhibits encompasses not only how things are displayed (chronologically or

not, for example), but also labels, objects, and hands-on displays (Davidson et al., 1994; Hein, 2006a).

Currently, most museums are traditional in the sense that they ‘present’ facts and objects to visitors (Monk 2013; Zaharias, Michael, & Chrysanthou, 2013). By presenting facts and objects in a unidirectional way, museums lose the opportunity to stimulate visitors’ learning since interactions between the visitor and the exhibits facilitates the connection between experience and learning (Hein, 2006b). In this sense, to promote learning, museum exhibits should be interactive and include diverse resources to support broader learning (Monk, 2013).

Regarding interactivity, there is much to be explored about the use of multi modalities resources in museums (Kim et al., 2016). There is a prevalence of the perspective that understands that museum exhibits should create experiences that kinesthetically stimulates the adult learner in different ways - such as making use of sounds, smells, images, and touch (Hohenstein & Moussouri, 2017; Mirghadr et al., 2018). The use of interactivity in museums, though, is not a consensus among authors. Some have concerns about the collateral effects of over-employing multisensorial approaches in museums (Davidson et al., 1994; Merriam, 2008; Mirghard et al., 2018; Zaharias et al., 2012).

Authors also seemed to have divergent opinions about the employment of technology in museum exhibits. Many museums use technology to convey information more effectively, but there is little academic research about these attributes (Evrard & Krebs, 2018; Zaharias et al., 2013). Defenders of the employment of technology in museums argue that interactive systems are crucial to enhance learning performance, retention of knowledge, engagement, and motivation (Falk, 1999; Zaharias et al., 2013). In addition, the employment of technology in exhibits might bring unprecedented opportunities to geographical limitations of museums

(Falk & Dierking, 2000). Technology may also be employed to attract visitors since museums have to compete to other attractions such as cinema, television, computers, shopping, etc. during the leisure time of people (Falk & Dierking, 2000; Komarac, et al., 2020; Orna-Ornstein, 2001).

Other scholars, though, have concerns about using technology in excess, turning museums into less authentic spaces, and requiring special tech competences from museum learners (Komarac, Ozretic-Dosen, & Skare, 2020; Matijevic, 2011). According to this perspective, the employment of technology may be a valid strategy, but it put museums into danger of forgetting their main advantage, that is to “provide contact with the real thing” (Orna-Ornstein, 2001, p.100). In addition, the massive use of technology in museums requires human and financial resources to implement it, adding a burden to many museums, especially the public ones (Falk, 1999; Komarac, et al., 2020).

Conceptual Framework

This section summarizes the literature reviewed for each of the four bodies of knowledge presented, indicating which are the theories and assumptions that are most relevant for this study.

Regarding Adult Learning, there are many and different attempts to explain the learning process in adulthood. Among them, Andragogy and Transformative Learning provide the most used (and therefore criticized) Adult Learning principles. The application of those principles varies according to the learning purpose. Among the different perspectives of Adult Learning, HRD is the adult learning’s perspective that aims to align the learning initiatives and the organizational efforts to accomplish the purposes of the organization.

Needs Assessment is a tool used to identify 'What Is' and 'What Should Be' status in organizations. There are many different needs assessment models and techniques, but the OEM is the only one which addresses all levels of the organization and the alignment among them, including the societal level. Needs assessment, as proposed by the OEM, includes the organizational levels that deliver means as well as those that deliver results.

Financial literacy is not only a function of knowledge and skills, but a complex array of other personal, interpersonal, and environmental factors with implications not only for individuals, but for the economy of the whole society (Way, 2014). Because of that, central banks invest in delivering financial literacy to populations in different ways. Among them, the maintenance of money museums is the most common effort to deliver financial literacy by central banks.

At last, regarding Learning in Museums, the role of museums as learning places is not questionable anymore. There is a lack of studies regarding adult learning in museums, so the field borrowed theories from other fields, like Experiential Learning and Informal Learning, among other assumptions. The Contextual Model of Learning, one of the few attempts to explain the learning process in museums, encompasses three different dimensions (personal, social and physical contexts) that overlap overtime.

The conceptual framework used to identify and categorize the learning design features for adults are the principles of Andragogy, Transformative Learning, Informal Learning, Experiential Learning, and Contextual Model of Learning. It is assumed that Financial Literacy is crucial for achieving the societal mission of the BCB. And for conducting the needs assessment, the conceptual framework adopted is the Organizational Elements Model, since it is the only model that addresses the results at the societal level, crucial for the study proposed.

CHAPTER 3: METHODOLOGY

The BCB is changing the current Museu de Valores into a new one, the future Museum of Economics of Brazil, which will adopt new features. In this sense, this study aimed to identify, consistently with stakeholder's perspectives, which learning design features for adults the future Museum should integrate in its exhibits and programs. The study was conducted as a needs assessment with key internal and external stakeholders, seeking for alignment of learning initiatives and organizational efforts in order to improve the performance of the future Museum (Kaufman, 2018b).

In order to fulfil the purpose of the study, each specific research questions was conducted as a step of the needs assessment: #1) In what ways do the current exhibits and programs of the Museu de Valores potentially promote learning among adult visitors?; #2) What are the perspectives of stakeholders of the Museum of Economics of Brazil about the ways adult visitors might learn from its future exhibits and programs?; #3) What are the differences between the current ways of promoting learning among adult visitors at the current Museu de Valores and stakeholders' perceptions of the future Museum of Economics of Brazil?; and #4) What are the learning design features that should be integrated in the exhibits and programs of the future Museum of Economics of Brazil?

The following six sections describe the methodology adopted by the study. The first section presents the research setting of the study, the current BCB's Museum. The second section presents the research methods and the rationale for choosing the methods employed, including research design, research instruments, and the strategies adopted to increase trustworthiness. The third section presents the sources of data selected and the sampling strategies employed. The fourth section presents the explanation on how data was collected.

The fifth section describes how data was analyzed, including the coding strategies employed. The sixth section discusses the ethical issues observed throughout the study, including the researcher's potential bias.

Research Setting

Organized in 1966, the Museu de Valores opened in 1972 in Rio de Janeiro, Brazil, as a means to preserve the history of the Brazilian currency (Banco Central do Brasil, 2018; AAMV, 1988). In 1981, with the construction of the BCB's headquarters in the federal capital, the Museum was transferred to its current location since then, in Brasília. The Museu de Valores encompasses two collections: numismatic and artistic (Banco Central do Brasil, 2018; 2021). This is the entrance to the numismatic collection:

Figure 3.1: Entrance of the Museu de Valores



Retrieved from: <https://www.letshotels.com.br/wp-content/uploads/2019/11/museu-1024x683.jpg>

The numismatic collection has started to be formed long before the formation of the BCB itself, by the predecessor of the Brazilian monetary authority, the Superintendencia de Moeda e Crédito [Superintendency of Currency and Credit] (AAMV, 2021). It was after the

creation of the BCB that its board has decided to organize the inherited collection into a museum, acquiring historical pieces of payments methods, monetary patterns, coins, and banknotes from public and private owners, forming the numismatic collection (AAMV, 2021). The current collection of the Museu de Valores has around 135 thousand objects that lead museum visitors to learn about the evolution of the Brazilian currency from the Brazilian colonial period to the present day (Banco Central do Brasil, 2021). It contains pieces of immeasurable value, like a coin from the Brazilian monarchical period and the biggest gold nugget in exposition in the world².

Besides the collection of foreign banknotes and coins, gold bars, nuggets, decoration medals, and artifacts related to the manufacture of money, the BCB has been investing in the Museum's potential to promote financial education among its visitors. In this sense, since 2012 the Museu de Valores has being managed by the Department for Promotion of Financial Citizenship, in order to strength the BCB's organizational efforts to deliver financial literacy to the population (Banco Central do Brasil 2018; 2021; Ferreira, 2013). The first (and so far, the only) exhibit deliberately designed to delivery financial literacy was conceived in 2009 and implemented in 2013, based on behavioral economics concepts, called "Você já parou para pensar"? [Have you ever stopped to Think?] (Ferreira, 2013).

The following pictures illustrate the numismatic collection of the Museu de Valores, with focus on coins, notes, and medals not only form Brazil, but from all over the world, exhibited in a traditional manner:

² <https://noticias.r7.com/distrito-federal/maior-pepita-de-ouro-exposta-no-mundo-fica-em-brasilia-31082014>;
<https://institutominere.com.br/blog/maior-pepita-de-ouro-do-mundo-esta-exposta-em-brasilia>;
<https://www.thermofisher.com/blog/mining/where-to-see-the-worlds-largest-gold-nuggets/>.

Figure 3.2: Exhibits of the numismatic collection³



³ Images retrieved from:
<https://memoria.ebc.com.br/2012/09/museu-do-banco-central-inaugura-exposicao-sobre-os-seus-40-anos-de-existencia>
<https://www.bcb.gov.br/acessoinformacao/museu>

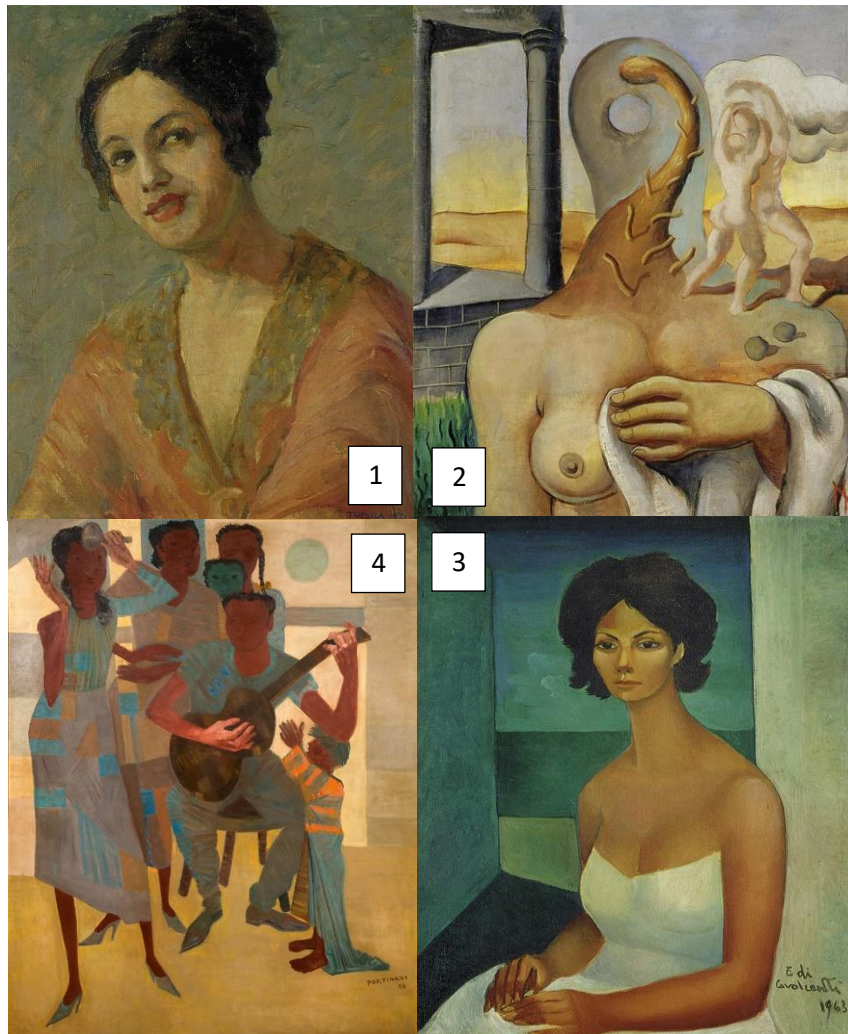
Figure 3.3: Biggest gold nugget in exhibition in the world



Retrieved from: <https://www.bcb.gov.br/acessoinformacao/museu>

The art collection of the Museu de Valores currently contains 554 paintings from Brazilian painters worldwide famous such as Emiliano Di Cavalcanti, Alfredo Volpi, Tarsila do Amaral, and Candido Portinari (Banco Central do Brasil, 2018). The vast majority of art pieces has the origin in forecloses during the period of 1970-89, as the result of financial institutions which left the Brazilian banking sector with debts (Banco Central do Brasil, 2018; OMFIF, 2020; Vallego, 2015). Without any cultural pretensions, the BCB inherited, in a short period, more than 4,000 pieces of paintings, draws, engravings, and sculptures from modernist artists, such as Alberto da Veiga Guignard, Aldemir Martins, Aldo Bonadei, Antonio Bandeira, Antonio Gomide, Antonio Carlos Rodrigues (Tuneu), Cícero Dias, Clóvis Graciano, Charlote Gross (Duja), Francisco Cuoco, Fúlvio Pennacchi, Guilherme de Faria, Ismael Nery, Ivan Freitas, Maciej Babinski, Marcelo Grassmann, Milton Dacosta, Orlando Teruz, and Vicente do Rego Monteiro, many of them blossoming at the time (Vallego, 2015). Some examples of the most important pieces of art of the current Museum are the following:

Figure 3.4: Examples of pieces from the art collection⁴



⁴ 1: Autorretrato com vestido laranja [Self-portrait in orange dress], from Tarsila do Amaral. Retrieved from: <https://www.bcb.gov.br/acessoinformacao/museu>
2: Desejo de Amor, óleo sobre tela [Love Desire, oil painting], 1932(Ismael Nery) Retrieved from: <https://www.bcb.gov.br/acessoinformacao/museu>
3: Samba, óleo sobre tela, [Samba, oil painting], 1956 (Candido Portinari) Retrieved from: <https://www.bcb.gov.br/acessoinformacao/museu>
4: Mulata em fundo verde, óleo sobre tela, [Mulatto woman in green, oil painting], 1963 (Emiliano Di Cavalcanti) Retrieved from: <https://www.bcb.gov.br/acessoinformacao/museu>

Meanwhile striving to incorporate such peculiar art patrimony and being frequently questioned for its competence to manage and maintain the art collection, the BCB has donated most art pieces through the years, closing temporarily their exhibition to the public and reopening the exhibit only in 2006, as part of the current the Museu de Valores (Vallego, 2015). Since then, the BCB has been maintaining a free and public art gallery which collection is evaluated in R\$ 500 million⁵. The current art collection of the Museu de Valores is a reference of the artistic and cultural Brazilian heritage, lending its masterpieces to other famous museums such as Museu de Arte de São Paulo Assis Chateaubriand - MASP and Museu de Arte Moderna de São Paulo - MAM⁶.

Considering both the numismatic and art collections, the Museu de Valores receives around 20,000 visitors per year, primarily from schoolchildren under 12 years old. The numismatic and art collections are segregated in two floors apart. The permanent exhibition, the numismatic one, is the same since 1981, with minor changes along the years. The few temporary and itinerary exhibitions during the period involved, in its majority, the art collection. Until 2020, before the pandemic, the Museu de Valores did not have a virtual exhibit, which was launched in 2021 (Banco Central do Brasil, 2018; 2021).

Inspired by the Museo Interactivo de Economía – MIDE [Interactive Museum of Economy], in Mexico, and by the City of Economics - Citéco, in France, both sponsored by central banks, the BCB has decided to transform the Museu de Valores into the Museum of Economics of Brazil. The implementation project of the future Museum of Economics, to be

⁵ Approximately \$ 100 million dollars in January, 2022.

⁶ <https://cultura.estadao.com.br/noticias/artes,banco-central-cede-21-obras-ao-masp-em-comodato,70002732643>; <https://www.youtube.com/watch?v=bRsUX5zVmyQ>; <https://www.metropoles.com/entretenimento/exposicao/banco-central-cede-em-comodato-21-obras-de-arte-ao-masp>; <https://jovempan.com.br/entretenimento/lifestyle/banco-central-empresta-obras-de-tarsila-do-amaral-e-outras-artistas-ao-masp.html>; <https://masp.org.br/acervo/obra/fachada-em-azul-e-verde>.

funded by the Brazilian Federal Fund for the Defense of Collective Rights, encompasses the following phases: architectural project for the future Museum; adaption of physical areas; project for exhibition design and curatorship; and implementation (Banco Central do Brasil, 2019). It will cost approximately R\$ 15 million⁷, and it is expected a period of five years for completion, started in July 2019 with opening in 2024 (Banco Central do Brasil, 2021). Despite the project is funded by governmental resources, it is sponsored and run by the BCB.

Research Design

Considering the complex and diverse aspects related to the needs assessment proposed, the study employed qualitative research (Hein 1995; Pekarik, 2007; Roederer & Filser, 2018; Witkin, 1977). The qualitative methods and designs employed have considered the purpose of the study, its research goals, and the exploratory nature of data, enabling the researcher to have insights and information about the context studied (Roberts & Hyatt, 2019; Lincoln & Guba, 1985). The rationale for choosing qualitative research was the flexibility it allows when dealing with multiple realities, which is the case since each stakeholder has her/his own personal perspective (Lincoln & Guba, 1985). In addition, the richness of data of qualitative methods and designs seemed to be most appropriate when conducting a needs assessment that aimed to uncover performance gaps and to identify the discrepancies between the current and desired status of the learning design features (Barker Steege et al., 2012; Elo et al., 2014; Lanigan, 2007; Lee et al., 2007; Preskill, 1981; Witkin, 1977; 1994).

Regarding the theoretical paradigm adopted, by employing qualitative research the researcher has adopted the constructivist approach, assuming that there is no single, observable

⁷ Approximately \$ 3 million dollars in January, 2022.

reality, but multiple interpretations of a single event, where the specific context is crucial to understand the problem presented (Harrison, 2014; Merriam & Tisdell, 2016). According to the constructivist approach, the researcher was interested in understanding the phenomena of those involved in the context studied, in how the participants made sense from their experiences, generating theory based on participants' meaning (Creswell & Creswell, 2018; Merriam & Tisdell, 2016). In addition, the researcher recognized that her own background and bias may have shaped the interpretation of the participants' meaning (Creswell & Creswell, 2018). Ontologically (about the nature of reality), the researcher acknowledged and valued subjectivity (Creswell & Creswell, 2018); and epistemologically (about the nature of knowledge), the researcher has acted as the main instrument of the research conducted (Creswell & Creswell, 2018; Leavy, 2014; Merriam & Tisdell, 2016; Roberts & Hyatt, 2019).

Because of the exploratory nature of the study and the need of making meaning from the concrete case, the designs employed were case study and action research, and the research instruments employed were those typically employed in qualitative case studies: documents, interviews, and observations (Roberts & Hyatt, 2019; Simon, 2014; Trimby, 1979; Witkin, 1994). Since the study was intrinsically bounded to the Museu de Valores and its change into the future Museum of Economics of Brazil, to be developed and implemented by the BCB, it characterized a case study research design with a unit of study, richly descriptive in nature (Merriam & Tisdell, 2016; Taylor & Neill, 2008).

According to Simons (2014), a "case study is an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution or system in a 'real-life' context. It is research based, inclusive of different methods, and is evidence-led." (p. 457). The uniqueness of the study comes from different perspectives: first, central banks are unique institutions to their countries. Each country has a single central bank,

and in Brazil it is not different. Secondly, the BCB hosts only one museum, and it is unique in the world because it is embedded in the Brazilian monetary and historical context, what differentiates it from other museums sponsored by other central banks. Third, these are pioneer efforts to build a museum of economics in entire South America, with few that are comparable around the world. At last, the implementation project of the Museum of Economics of Brazil is the first attempt to change and improve the current BCB's museum since it has been opened, decades ago.

The second research design adopted was action research. Like the case study, action research is context-specific and situation-based (Koshy, Koshy, & Waterman, 2011). Its purpose is to support practitioners by generating solutions for practical problems, with engagement of the participants at some level of the change process (Koshy et al., 2011; Merriam & Tisdell's, 2016). The study involved a real change situation within a given specific context, relying on stakeholders' engagement to improve practice (Merriam & Tisdell, 2016).

Regarding the research instruments employed, documents are particularly applicable to case studies and needs assessments to illuminate findings, become evidence, reinforce triangulation, and/or simply be the most adequate source of data (Bowen, 2009; Kaufman, 2006; Merriam & Tisdell, 2016). Advantages of analyzing documents include availability; stability of information; cost-effectiveness; unobtrusiveness; efficiency; and richness of information that is contextually relevant (Bowen, 2009; Lincoln & Guba, 1985). In addition, as an unobtrusive measure of naturalistic approach, they can be adequately applied to museums (Armstrong, 2010; Merriam & Tisdell, 2016; Webb, Campbell, Schwartz, & Sechrest, 2000).

For the reasons above, documents were particularly important for the concrete case since they contained corporate perspectives about the current and future Museums, as well records with individuals' perspectives of stakeholders. The documents analyzed were

electronic (texts and audios) and non-confidential. They were related to the BCB; to the current Museu de Valores; and to the future Museum of Economics of Brazil. Documents have provided excellent clues to trouble spots and best evidenced the problems assessed, crucial for contextualizing the problem faced (Knowles, 1981).

Interviews, the second research instrument employed by this study, are traditionally considered to be sources of data for qualitative research and needs assessments (Merriam & Tisdell, 2016; Preskill, 1981). Despite the possible participants' and researcher's bias involved in interviews, advantages of interviewing include the researcher's opportunity to interpret the non-verbal communication and to explore hidden meanings, not always easy (Ryan, Coughlan, & Cronin, 2009). According to Knowles (1981), despite being time-consuming and results being difficult to quantify, interviews are an effective method for needs assessment because they reveal feelings, causes, and possible solutions to the problems presented, affording a maximum of opportunity for free expression. They are also considered to be the most flexible research instrument to gather information, crucial in needs assessments (Webb et al., 2000).

The purpose of employing interviews was to explore the personal views, beliefs, experience, and motivations of stakeholders, allowing a deeper understanding of the change proposed (Gill, Stewart, Treasure, & Chadwick, 2008; Talmy, 2011; Ryan et al., 2009). The interviews provided in-depth context and stories, not always reflected in corporate documents (Watkins et al., 2012). In addition, interviews allowed to focus on the perspectives of stakeholders about the learning design features FOR ADULTS, a focus that was not always clear in the documents analyzed.

At last, observations, the third research instrument employed, are typically the research instrument for museums studies (Tucker, 2014). They have the advantage of capturing data in more natural circumstances and valuably informing about the influence of physical contexts,

particularly relevant to museums (Mulhall, 2003). Although observations may be highly subjective, they are committed to study something in its natural state, with no pre-selection of variables, in line with the naturalistic inquiry perspective applied to museums (Armstrong, 2010; Merriam & Tisdell, 2016; Sandelowski, 2000; Watkins et al., 2012). Observations can produce meaningful assessment results and have the advantages of reducing the potential for bias; increasing reliability; and providing accurate way to report data (Gupta, et al., 2014). In addition, as a needs assessment, the study has employed observations also to illuminate, corroborate, and prioritize the learning design features that promote adult learning in the Museum (Watkins et al., 2012).

Regarding trustworthiness, according to Lincoln and Guba (1985), given the characteristics of qualitative research methods, the conventional research criteria for increasing trustworthiness does not work in qualitative studies. In qualitative research, subjectivity is inevitable for participants and the researcher, so rather than seeing subjectivity as bias or something to counter, it is essential to understand and interpret the experience of participants (Simons, 2014). In this sense, Lincoln and Guba (1985) have proposed that, in qualitative research, the traditional criteria of trustworthiness (internal and external validity, reliability, and objectivity) are substituted by credibility, transferability, dependability, and confirmability.

These reviewed criteria emphasize the typical role of the researcher as the main instrument in qualitative research, which count on different strategies to increase trustworthiness such as triangulation; thick description; peer review or member check; and auditing and clarification of the researcher's biases (Creswell & Creswell, 2018; Merriam & Tisdell, 2016). In order to increase trustworthiness, this study relied on: (i) triangulation to establish credibility and transferability; (ii) thick description to facilitate transferability; and

(iii) auditing to establish dependability and confirmability through reflexivity of the researcher (Lincoln & Guba, 1985; Merriam & Tisdell, 2016).

Triangulation is a powerful and the best-known strategy to increase research trustworthiness (Merriam & Tisdell, 2016). It allows the increase of credibility and transferability by using multiple investigators; different data collection methods; and/or different sources (Lincoln & Guba, 1985; Preskill, 1981). It allows data comparing and cross checking from people with different perspectives (Merriam & Tisdell, 2016).

The researcher has employed triangulation to increase trustworthiness of the study by employing different data collection methods (documents, interviews, and observations) and different sources (17 different documents; eight interviews with different stakeholders; and four observations in different museums and countries). The documents containing records and notes from meetings were used to triangulate data collected from interviews, and vice versa. Observations had the potential to elucidate the best practices on the field, corroborating (or not) the perspectives collected through documents and interviews.

Thick description was the second strategy adopted by the researcher to increase trustworthiness, facilitating transferability by providing details about the setting studied (Creswell & Creswell, 2018). Thick description is particularly useful when paying attention to contextual details, most relevant in case studies (Mills, Durepos, & Wiebe, 2010). By employing rich and thick description, the researcher has employed words rather than numbers to convey what was learned from the problem being studied (Merriam & Tisdell, 2016). Data came in the form of quotes, field notes, and excerpts from documents and interviews, reinforcing the descriptive nature of qualitative research (Merriam & Tisdell, 2016). In addition, the researcher has added images to illustrate data collected whenever possible. Thick description was employed to explain data collection and data analysis by disclosing

positionality and reflexivity of the researcher, a relevant issue since the researcher has also the role of practitioner in the organization studied (Bowen, 2009; Creswell & Creswell, 2018; Elo et al., 2014; Ferguson & Ferguson, 2000; Leung, 2020; Merriam & Tisdell, 2016; Witkin, 1994).

At last, to increase dependability and confirmability and facilitate external auditing, the researcher has maintained a reflexive journal (Lincoln & Guba, 1985). The audit trail allows description of how data were collected, categories were derived, and decisions were made (Merriam & Tisdell, 2016). According to Janesick (2014), “the researcher reflective journal has proven to be an effective tool for understanding the processes of research more fully, as well as the experiences, mindsets, biases, and emotional states of the researcher” (p. 306). Under the label of Analytic Memo, the researcher has recorded thoughts, perceptions, and feelings along the research process.

Data Sources and Sampling

As qualitative research, the researcher employed purposeful sampling for selecting the sources and participants of the study, with sampling based on quality and relevance rather than quantity, with documents, people, and places which could most contribute to the topic investigated (Bowen 2005; Merriam & Tisdell, 2016). Purposeful sampling is based on informational, not statistical considerations; and its purpose is to maximize quality of information, rather than to facilitate generalizations (Lincoln & Guba, 1985). In addition, it saves time, money, and efforts - what was extremely relevant for the study since the project is already on course (Lincoln & Guba, 1985). In this study, purposeful sampling was employed in two levels: first, for the selection of the case study itself. Second, for the decisions about

which documents to analyze, whom to interview, and where and what to observe (Elo et al., 2014; Merriam & Tisdell, 2016).

The first level of sampling was based on the personal perspective of the researcher, who has selected the case study considering her personal interest on the topic, as it happens in most of the topics and cases selected in applied fields of practice (Merriam & Tisdell, 2016). As the researcher works for the BCB, she has selected the case study considering the access to the organization; the opportunity to contribute to a project that was already on course, with implications for practice; the previously identified need of clarification on the change process being conducted; the opportunity to apply the knowledge acquired in the graduate course; and the unique opportunity to participate in the implementation of a museum that aims to be innovative and singular in Brazil. Once the researcher has selected the case study, the second level of sampling was applied to the research instruments selected, as following.

Documents were considered primary sources of data because they contain the individual perspectives of stakeholders as well as the official corporate perspectives about the BCB, the current Museu de Valores, and the future Museum of Economics. They were employed to answer research questions #1 and #2, indirectly contributing to research questions #3 and #4. The original set of documents was comprehensive, and purposeful sampling was based on: (i) relevance for the needs assessment proposed; (ii) contribution to specific research questions of the study; (iii) availability; and (iv) unobtrusiveness. According to these criteria, the documents sampled for the study were: (i) records and notes from meetings; (ii) the Project of the future Museum of Economics of Brazil; (iii) the Museology Plan of the Museu de Valores; and (iv) the Strategic Planning of the BCB.

Records and notes from meetings are corporate documents, internal but not confidential, electronic (in Word files), in Portuguese, derived from meetings conducted by

the Museu de Valores team members during preparation of the implementation project of the future Museum of Economics. The researcher has selected 14 records and notes from meetings and there were other available, but because others did not meet the criteria of (i) relevance for the needs assessment and (ii) contribution to specific research questions of the study, they were not included in the sample.

The Project of the future Museum of Economics of Brazil was developed internally by the Museu de Valores team members with approval from the BCB's board of governors. It was presented to the Brazilian Federal Fund for the Defense of Collective Rights when submitted the candidacy to receive the funding. It is an electronic document, in Portuguese. Despite being an internal document, information about the projects funded by the Brazilian Federal Fund for the Defense of Collective Rights, including the project for the Museum of Economics, is also available to the public in the Fund's website.⁸

The Museology Plan of the Museu de Valores and the Strategic Planning of the BCB are official corporate documents, produced internally, and they reflect the 'voice' of the organization, more than the sum of the perceptions of stakeholders or employees. The Museology Plan was approved in 2018 and it was the foundation of the Project of the future Museum of Economics, developed by the Department for Promotion of Financial Citizenship and approved by the BCB's board of governors. It contains a brief review from the literature about the topic, data from other museums which have inspired the Museum of Economics, the description of the Museu de Valores, the institutional mission, and the vision for the future of the Museum, which are:

⁸ <https://legado.justica.gov.br/seus-direitos/consumidor/direitos-difusos>

- Mission of the Museu de Valores: “to invite the citizen to recognize himself/herself in the economic life of Brazil, promoting reflection and creative dialogue” (Banco Central do Brasil, 2021, p. 93)⁹.

- Vision for the future of the Museu de Valores: “to be a reference among museums, and a privileged channel for promoting interaction between the BCB and society, contributing for the strengthening of financial citizenship” (Banco Central do Brasil, 2021, p. 94)¹⁰.

The Strategic Planning of the BCB is the result of the planning process conducted each four years, following the planning calendar for the federal government. The version used in this study is from the period 2020-2023. The process is conducted by the Department of Planning and the Human Resources Department, following the BCB’s board of governor’s guidelines. It is top-down, and it involves all managers of the organization. It encompasses the Institutional Mission and the Vision of the Future of the BCB (presented in Chapter 1); Organizational Values (Integrity, Focus on Results, Openness to Change, Excellence, Cooperation, and Social-Environmental Responsibility); and its Strategic Objectives¹¹.

Interviews were also considered primary sources of data, employed to answer research questions #1 and #2, indirectly contributing to answer research questions #3 and #4. The purposeful sampling for interviews involved two groups of stakeholders of the future Museum of Economics of Brazil: internal and external. For both groups, participants were considered representatives of their groups.

⁹ Translation provided by the researcher.

¹⁰ Translation provided by the researcher.

¹¹ <https://www.bcb.gov.br/en/about/strategicplanning>

By internal stakeholders were understood those who work for the BCB, taking part on the decision-making process regarding the future Museum, and directly responsible for its success. This group encompassed basically the BCB's board members, who are ultimately responsible for achieving the BCB's mission. They are highly educated professionals, who hold master's or doctoral degrees, primarily from the fields of Economics and Business. Since the BCB has nine board members and six of them had already participated in meetings regarding the future Museum, the criteria for selecting the participants were (i) the lack of records and notes from meetings with their perspectives about the Museum; and (ii) strategic leadership and influence within the organization. Considering these criteria, the researcher has interviewed four internal stakeholders. Three of them did not have the chance to participate in previous meetings regarding the future Museum of Economics, and one, despite having previously participated in meetings, is considered to have great leadership and influence within the organization.

As external stakeholders were understood experts outside the BCB, which do not take part in the decision process about the future Museum but have professional interest in its successful implementation. This group consists of Brazilian financial educators and museum experts, whom are in direct contact with the Brazilian adult population and know their learning needs regarding financial and museum issues. They are considered to be stakeholders of the future Museum of Economics because their professional interests and careers collaborate to improve financial literacy of the population or learning processes in museums.

Purposeful sampling for external stakeholders was based on: (i) reputation in the field; (ii) reference from peers; and (iii) relationship with the Museu de Valores. These criteria were defined to strengthen the representativeness and reliability of external stakeholders. The researcher has interviewed four external stakeholders: one from the field of financial literacy

(with excellent reputation, publications, and referenced by the Museum team and peers); two from other public museums (strongly referenced among museum educators, from respected and successful museums); and one from the Fund for the Defense of Collective Rights, the agency that is funding the Project.

At last, regarding observations, they can be considered primary or secondary sources of data, depending on the research questions and their purposes, therefore presenting different criteria for sampling. To contribute to research question#1, which aimed to identify the ‘What Is’ status, observation was limited to the Museu de Valores, which is the object of this study, so it was considered a primary source of data. However, observations in other museums with the purpose of triangulation and corroboration of the results for research questions #2 and #4 were considered secondary sources of data.

For sampling the museums for observations, being a museum of economics was a crucial criterion. Any search on the internet using common search providers reveals that there are more than a hundred money museums, and only three of them are both sponsored by central banks and entitled to be a ‘museum of economics’.¹² The three museums of economics that are sponsored by central banks are: (i) the Museo Interactivo de Economía (MIDE), in Mexico, (ii) Citéco, the City of Economics, in France; and (iii) the Economy Museum of the Federal Reserve of St. Louis, in the United States. Therefore, these museums were selected for observations.

The MIDE, developed by the Banco do México and opened in 2006, was the first interactive museum of economics in the world (MIDE, 2021). It was built on informal learning premises to foster public debate (Massarani, Rocha, Poenaru, Bravo, Singer, & Sánchez,

¹² <https://globalmoneyweek.org/index.php/money-museums> and https://en.wikipedia.org/wiki/Category:Museums_of_economics.

2020). It has been recognized along the years by different awards, such as the Gold Muse Award, by the American Association of Museums, and the Roy L. Shafer Leading Edge Award, by the Association of Science and Technology Centers, among others.¹³

The Citéco is sponsored by the Banque de France in partnership with the French National Library and the French Ministry of Education, among others (Citéco, 2021). The Citéco opened in 2019 as the first museum entirely devoted to Economics in Europe, and it was inspired by the MIDE.¹⁴ Installed in a historic building, the Citéco prides to have permanent and temporary exhibits for the young and old, novices, and experts that have the willingness to (re)discover economics (Citéco, 2021).

The Economy Museum of Federal Reserve Bank (FED) of St. Louis is considered to embrace financial education broadly (Federal Reserve Bank of St. Louis, 2021). It became the 11th out of 12 FED units to host a museum (Brown, 2014). It focuses on economic concepts rather than on the historical currency and counterfeit bills, common to other FED museums (Brown, 2014; Federal Reserve Bank of St. Louis, 2021).

¹³ <https://sites.google.com/site/museointeractivodeeconomia/premios> and https://en.wikipedia.org/wiki/Interactive_Museum_of_Economics

¹⁴ <https://www.sortiraparis.com/arts-culture/exposure/articles/189235-citeco-the-city-of-the-economy-in-paris/lang/en>; and <https://phys.org/news/2019-06-art-money-paris-museum-economy.html>

Table 3.1: Summary of Sources

Research Questions	Sources		
	Documents (Primary)	Interviews (Primary)	Observations (Primary or Secondary)
<p>#1 In what ways do the current exhibits and programs of the Museu de Valores potentially promote learning among adult visitors? (WHAT IS)</p>	Records and notes from meetings; and Museology Plan of Museu de Valores.	Internal and external stakeholders.	Museu de Valores
<p>#2 What are the perspectives of stakeholders of the Museum of Economics of Brazil about the ways adult visitors might learn from its future exhibits and programs? (WHAT SHOULD BE)</p>	Records and notes from meetings; Project of the future Museum of Economics of Brazil; Museology Plan of the Museu de Valores; and Strategic Planning of the BCB.	Internal and external stakeholders.	MIDE; Citéco; and Economy Museum of FED St. Louis.
<p>#3 What are the differences between the current ways of promoting learning among adult visitors at the Museu de Valores and stakeholder perceptions of the future Museum of Economics of Brazil?</p>	Answers from research questions # 1 and #2 (DISCREPANCIES between WHAT SHOULD BE and WHAT IS)		
<p>#4 What are the learning design features that should be integrated in the exhibits and programs of the future Museum of Economics of Brazil?</p>	Answers from research question #3 (PRIORITIES among DISCREPANCIES)		Museu de Valores, MIDE, Citéco, and FED St. Louis.

Data Collection

The researcher has collected data through November to December 2021. In qualitative research, data collection is typically directed to discovering the who, how, what, when, why, and where of experiences, with semi-structured techniques that include verbal and visual data (Creswell & Creswell, 2018; Mills et al., 2010; Sandelowski, 2000). Because in needs assessments data can be considered hard - independently variable, controlled and verifiable; or soft - personal, not independently, and not verifiable data (Kaufman, 1986; Watkins & Altschuld, 2014), both hard and soft data must be combined to determine the gaps and priorities in needs assessments, employing different instruments to collect data (Kaufman, 1986; 2011; Watkins & Altschuld, 2014).

Regarding the collection of documents, the records and notes from meetings, the Project of the future Museum of Economics, and the Museology Plan of the Museu de Valores have been provided by the Museum's staff. Authorization for using corporate documents was issued by the Deputy Governor of the BCB responsible for the Museum, with the request of anonymizing records and notes, what has been provided by the researcher (Appendix F: Letter of Institutional Support). The Strategic Plan of the BCB is available for general public access at the BCB's website.¹⁵

For collecting data through interviews, participants were firstly contacted by e-mail or WhatsApp, depending on the contact available. Interviews had begun with a spoken explanation about the voluntary consent, confidentiality of data, and right to withdraw at any time. Interviews were conducted in Portuguese, online and synchronously, by the digital platform Teams or WhatsApp (depending on the preference of the interviewee), allowing

¹⁵ <https://www.bcb.gov.br/en/about/strategicplanning>

recording and transcription. Except for one interview, which presented an unpredictable error of the digital platform, all interviews were recorded. During the interviews, which lasted from 30 minutes to one hour, the researcher took notes.

With the objective of collecting personal perspectives of stakeholders, the researcher has employed semi-structured and open-ended interviews, allowing participants to diverge or respond in more details to the questions asked (Merriam & Tisdell, 2016). Questions regarding the current and future Museums were flexible, allowing the researcher to discover information that was important for the needs assessment (Gill et al., 2008; Merriam & Tisdell, 2016). The interview protocol was built to address all organizational elements as prescribed by the OEM model (Inputs, Processes, Products, Outputs, and Outcomes) (Appendix C: Interview Protocol).

Regarding observations, because of the sanitary and traveling constraints imposed by the pandemic, data was collected virtually. The researcher relied on museums' own websites and databases as well as on third parties' websites like Youtube and video blogs from specialized magazines and digital influencers, which had virtual tours of the sampled museums. Despite limited, virtual observations allowed the researcher to adopt the role of complete observer by paying attention to features that go unnoticed for most people, helping to understand the context of museums in an unobserved, passive, and unobtrusively way (Merriam & Tisdell, 2016; Mulhall, 2003; Webb et al., 2000). The observations allowed the researcher to interpret the implementation of learning design features for adults in firsthand, without the need to count on intermediary interpretation of others (Merriam & Tisdell, 2016; Webb et al., 2000).

Observations were semi-structured, and they have focused primarily on physical features. According to Tucker (2014), physical features are a solid base for studying exhibits,

programs, or museums as institutions, and powerful in shaping attitudes from visitors. However, different from interviews, the observation protocol did not address the organizational elements as prescribed by the OEM model, but rather the elements of the Contextual Model of Learning (Appendix E: Observation Protocol). Behavior and interaction of museum visitors, when available, were interpreted as part of the museum context.

Observations had different durations, depending on the availability of material and size of the museum. Virtual tours last from 1 minute up to 53 minutes long (Appendix D: Table of Observations). Although they could be replayed anytime and for many times, the total length of observations considered a single play of each of the materials accessed. The total length of observations lasted around seven hours, distributed as following:

Table 3.2: Observations

Museum	Length
Museu de Valores (Brazil)	1 hour, 25 minutes
MIDE (Mexico)	3 hours, 31 minutes
Citéco (France)	1 hour, 22 minutes
Economy Museum of FED St. Louis (USA)	53 minutes

Observations were not recorded but they are available for public access, enabling auditing and strengthening trustworthiness. To illustrate the results from the exhibits observed, the researcher has also counted on free pictures available at the internet to illustrate visual data. During observations, the researcher took descriptive field notes in Word processor in Portuguese, English, and Spanish, depending on the language used in the videos.

At last, the three research instruments employed (documents, interviews, and observations) presented translation issues during data collection. Because the object of the

study is located in Brazil, the majority of data collected was in Portuguese, but there was data in Spanish as well as in English. To increase consistency and reliability, translation has been provided by the researcher herself, who is fluent in Portuguese, English and Spanish, for coding, findings and results.

Data Analysis

In needs assessments, data analysis is employed through successive interactions, analysis, findings, and decision making (Barker Steege, Marra & Jones, 2012). These interactions, typical of qualitative research, characterize the inductive mode of reasoning (Bowen 2005; Merriam & Tisdell, 2016). Although the inductive mode of reasoning is mostly used in qualitative research, the deductive mode of reasoning may also be employed to support data analysis strategies (Bingham & Witkowsky, 2012; Soiferman, 2010). In this sense, the researcher has punctually employed the deductive mode of reasoning to complement and support the inductive analysis.

By the inductive process, researchers collect arguments based on experience, interviews, or observation, gathering the words from participants of the study and analyzing data by looking for common themes (Merriam & Tisdell, 2016; Soiferman, 2010). Then, themes are arranged into categories and patterns to help making sense from the data collected (Creswell & Creswell, 2018; Lincoln & Guba, 1985;). In the inductive process, the literature review is brief and used to provide evidence for the purpose of the study (Creswell & Creswell, 2018; Soiferman, 2010). Theory is expected to emerge from data after the analysis, moving from specific observations of individuals to broader generalizations (Lincoln & Guba, 1985; Soiferman, 2010).

On the other hand, the deductive mode of reasoning is typical of quantitative research, which approach is to test theories (Creswell & Creswell, 2018). It uses numbers rather than words to draw results, and data is organized into categories to maintain alignment with research questions (Bingham & Witkowsky, 2012; Merriam & Tisdell, 2016; Roberts & Hyatt, 2019). In the deductive process, literature review is extensive and detailed, used to define the variables to be studied before data analysis (Creswell & Creswell, 2018; Soiferman, 2010). The researcher works ‘top-down’, testing the application of the broad theory to the specific case (Soiferman, 2010; Roberts & Hyatt, 2019).

Despite being apparently opposites, the two methods of reasoning are not mutually exclusive (Soiferman, 2010). In fact, they are virtually inseparable and interchangeable in some degree in any type of research (Bingham & Witkowsky, 2012; Newman, 2000, Soiferman, 2010). In this sense, the researcher had applied primarily the inductive mode of reasoning to make meaning from the words of documents and interviews, and from images of observations. Deductive strategies, though, were used to help organizing the categories for coding and to enrich analysis of results.

As a qualitative study, the researcher has started data analysis concurrent with data collection (Soiferman, 2010). Considering the size of the data collected and the lack of experience of the researcher with computer assisted qualitative data analysis software, data was manually coded by the researcher with the help of currently used word and spreadsheet processing programs (Merriam & Tisdell, 2016). Furthermore, considering that privacy of stakeholders was relevant for this study, the researcher employed anonymized forms to code data (Appendix G: Coding Protocol). Coding forms were analyzed one-by-one with succeeding reading, identifying words and expressions that traduced the stakeholders’ perspectives.

After the first round of reading and re-reading, the researcher has started to organize data in categories, applying, at that point, the deductive mode of reasoning to help finding from the literature reviewed a way to organize data. Considering the research questions, the conceptual framework used for Needs Assessment, the OEM, was employed by the researcher to define the first level of category. In this sense, words and were categorized into Inputs, Processes, Products, Outputs, and Outcomes, considering the OEM definition for these elements (1989, 2005a; 2011; 2018a).

In the category Inputs were classified the words, expressions, and images related to resources and raw elements employed by the Museum to build and present its exhibits and programs. For examples, it was included the perceptions regarding the characteristics of the facilities (light, space, accessibility, attractiveness, etc.); content; planning; resources, among others.

In the category Processes were classified the words, expressions, and images related to means and procedures that the visitors undergo when visiting the Museum, such as interactivity; language; and type of approaches used to promote learning among adult visitors. Processes included aspects related to guidance and orientation, specific designs, the choice of examples used to illustrate the learning, use of technology, chronology of exhibits, and diversity and cultural and accessibility, among others.

In the category Products were classified words, expressions, and images related to the results that the Museum delivers to museum visitors individually. In the category Outputs were categorized words, expressions, and images related the results the Museum delivers to groups of visitors as a whole. At last, in the category Outcomes were included the results the Museum delivers for society, transcending the groups of museum visitors.

Once defined the first level of category with the help of the deductive mode of reasoning, based on the OEM definition of organizational elements (Kaufman, 1989), the researcher continued the coding process inductively, by reading and re-reading the forms, generating codes and additional categories (Preskill, 1981). At that stage, variables were not known, and codes and categories had to be responsive to the specific research goals of the study, exhaustive, and mutually exclusive (Merriam & Tisdell, 2016). The researcher thus has employed inductive strategies by comparing line by line, sentence by sentence of the documents, interviews, and observations' notes to decide which code fitted into the categories or patterns (Bowen, 2005; Creswell & Creswell, 2018).

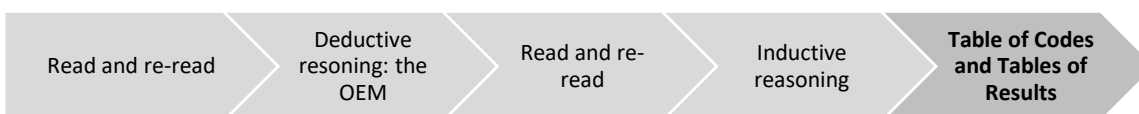
The identification of possible codes was registered into a first draft of table of categories, in a common spreadsheet, which allowed the researcher to adjust codes and categories along the process of analyzing data. Inductively reading and re-reading allowed the researcher to group the codes that fitted into the first level of category. In addition, reading and re-reading also helped the researcher to eliminate redundancies of codes with same meanings (like 'short messages' and 'not long messages'), adjusting the coding protocols, and generating a table of codes (Appendix H: Table of Codes).

The Table of Codes summarized, in a single place, all codes and categories after data analysis. Adjustments in the table of codes and categories were made until the last source of data was coded, in a continuous cycle. The researcher also has registered in this table information regarding the source of the code: if it had been pointed by the conceptual framework adopted in the study or if it arose from the concrete situation (evidence observed from the study).

Once all coding protocols forms were coded according to the Table of Codes, codes were registered in two similar but separated spreadsheets (Appendix I: Table of Results: What

Is, and Appendix J: Table of Results: What Should Be). These spreadsheets were the starting point for the researcher to work on the study's results. It was the way she found to have a complete and comprehensive view of all data collected, allowing comparison across sources, facilitating triangulation, and identifying patterns and possible discrepancies. In addition, these tables helped the researcher to complement the inductive analysis of words and images with deductive analysis of the number of references for each code and category, allowing the researcher to complementarily use inductive and deductive strategies to generate results for research questions #1 and #2, consequently for research questions #3 and #4.

Figure 3.5: Data Analysis Process



Although all results arose from stakeholders' perspectives, they were not the same in relevance. There were differences in the number of perceptions manifested by stakeholders (in other words, number of references received), and if they are supported by literature or by evidence from the concrete case. These aspects were not based on quality or judgments – rather, they are objective criteria employed to prioritize the learning design features that should be integrated into the exhibits and programs of the Museum of Economics. In this sense, to answer research question #4, the researcher has employed the following criteria to generate the list of the learning design features:

- i) Each feature must be drawn from the results of the study (presented in research questions #1, #2, and/or #3);
- ii) Each feature must be supported by the literature explored in Chapter 2;

- iii) Each feature must be stated in way that it is clearly actionable, considering the organizational elements drawn from results; and
- iv) Each feature must be mutually exclusive from other features.

Ethical Considerations

The letter of approval from the Institutional Review Board (IRB) was received on the 11th of November 2021, under Protocol #22298 (Appendix A: IRB Approval). Considering the nature of the study, ethical considerations did not focus on minimizing material, psychological, reputational, or physical harm (Traianou, 2014). Rather, they involved respecting privacy, providing thick description, and acknowledging the presence of the researcher, capitalizing on her perspectives and biases to address issues as personal disclosure, authenticity, and credibility (Creswell & Creswell, 2018; Hein, 1997; Rennie & Johnston, 2004; Traianou, 2014; Webb et al, 2000). The researcher reflexivity is so relevant for this study that it will be discussed in a special part of this section.

About respecting privacy, according to Merriam and Tisdell (2016), one of the most transparent and ethical ways to deal with it is by obtaining informed consent during data collection. Despite the researcher had access to public and internal corporate documents, informed consent to use them was provided by the head of the responsible area (Appendix F: Letter of Institutional Support). For the interviews, respondents were invited to voluntarily take part in the study, and consent form was sent by e-mail for their agreement (Appendix B: Consent Form). Agreement on the Consent Form was received from all respondents. At last, observations did not require informed consent because they were conducted in public databases.

Privacy and confidentiality were specifically relevant for the group of internal stakeholders, which have high hierarchical positions within the organization studied. In addition, during interviews, internal stakeholders could feel disconformable and/or not willing to disclose their positions regarding the current and future museums; fear of interference in their activities; and misinterpretation of the purpose and use of the study's results. To prevent and avoid these feelings from internal stakeholders, the researcher relied upon the clarification of the purpose of the action research study and reinforced confidentiality issues.

Regarding external stakeholders, privacy and confidentiality were not so relevant issues as they were for internal stakeholders. Nevertheless, since the researcher works for the BCB, which is the financial sector regulator and supervisor and the monetary authority of Brazil, it imposed, per se, a power relation. To address the power relation, the researcher relied upon the reinforcement of the academic purpose of the study and, having previous awareness about it, she built trust and a safe room for disclosure of positions by appreciating the contributions and reinforcing the similarities between the researcher and interviewees. These similarities were the passion for financial literacy, efforts for overcoming the challenges common to public museums, and the concern for effectively applying public resources in the Project.

Another measure adopted by the researcher to guarantee privacy and confidentiality of data collected was storage. Records of interviews were stored in a safe account in One Drive. The files used to codify the texts were anonymous and the only record of the name of participants is a spreadsheet stored in OneDrive that only the researcher has access to. Quotes did not present any kind of identification, allowing safe and confidential auditing anytime.

To provide thick description, the researcher had relied on field notes, images, and the maintenance of a reflexive journal during the study. Thoughts, feelings, and potential

connections were recorded in journal called Analytic Memo. Because thick description is also a strategy to increase credibility and reliability of the study, the researcher has included as many detailed as possible when presenting results, so the reader can access, understand, and audit the data analyzed.

Researcher's Identity

The researcher's identity is an important component of qualitative research and part of ethical considerations and credibility of this study, which acknowledged the presence of the researcher and capitalized on her perspectives by identifying assumptions and dispositions that could interfere in data collection and analysis (Berger, 2015; Merriam & Tisdell, 2016). In this sense, the researcher discusses her role under two perspectives: as a graduate student and as a practitioner. Although these are distinct perspectives, they are related since the choices made during the graduate course were mostly aligned to the professional interests of the researcher.

First, as a graduate student, the researcher has a varied academic background. She has a bachelor's in business, is a lawyer, has a master's degree in Public Administration, and professional certificates in Foreign Trade, Women's Leadership, and Innovation. This means that the researcher does not have a career built in the educational field. On the contrary, her academic perspectives are the result of multidisciplinary fields of knowledge.

Another important aspect to note is that the researcher is an international graduate student, with her academic background built among different institutions in the United States and Brazil. The academic positions of the research are the result of these two cultures, each one with its particularities. The Brazilian cultural aspects have predominancy since the researcher lives and works in Brazil, being present not only in the researcher's perspective when conducting the study, but also in the way that she understands adult learning, museums, financial literacy, and why not to say, life as a whole.

Regarding the researcher's role of practitioner, it probably brought into the study the most relevant bias. The researcher has been working for the BCB for 15 years and she is embedded in the organizational culture of the BCB. She holds a position of leadership, close to the main internal stakeholders, so she can be considered an insider. As being part of the group of internal stakeholders of the future Museum of Economics, the researcher believes that its implementation will increase the value BCB delivers to society. This study, itself, is an endeavor of the researcher to contribute to the success of the Museum of Economics of Brazil.

As a senior employee of the BCB, the researcher tends to share beliefs and motivations with other internal stakeholders, including personal characteristics like age (adults); similar educational backgrounds; willingness to visit and participate in cultural settings (like museums); and organizational culture (the BCB). This proximity and share of beliefs are embedded in the assumptions the researcher made during data analysis.

In fact, data analysis in general was impacted by the researcher perspectives. Being an adult and considering that financial education issues are somehow part of the researcher's work setting, the experience and background on the topic helped her to conceptualize and uncover the main learning needs of adults related to financial literacy. On the other hand, since the researcher is considered to be already a financial literate adult, her previous professional

experience and knowledge may have prevented her from truly understanding the agonies and concerns that adults, who are unfamiliar with financial concepts, could bring along when visiting the Museum. In addition, as a public officer and senior executive officer of BCB, the researcher is embedded with some concepts and beliefs that are important to disclosure such as public efficiency; focus on results; lack of experience in managing museums, abundant experience in the field of HRD; and the privileged view of the project.

As a public officer embedded with the concepts of public efficiency, the researcher believes that the use of public resources to implement the future Museum of Economics of Brazil reinforces the need of adding maximum value for citizens and society, at minimal costs for the public budget. This means that even though the researcher considered all the perspectives as they were collected, the relation of efficiency is always present in the researcher interpretation. In the same sense, as a practitioner, the researcher is embedded with the value of focus on results. This means that alternatives that are not feasible to implement nor actionable naturally lose relevance in priority from the researcher perspective. As a stakeholder of the project, the researcher is interested in having the best results, maximizing success, and making of the future Museum of Economics of Brazil a reference in delivering financial literacy for population.

Relevant to say that, despite her best endeavors to implement a museum with a strong educational intent, the researcher lacks experience in professionally managing a museum. Her interest in museums comes primarily from a personal perspective having visited many museums around the world. Most of the professional experience of the researcher comes from the HRD field. She has been the head of training of the BCB for almost a decade, and issues like adults' motivation to learn, alignment to business strategies, and learning from a real-life problem-situation have been the daily challenges of the researcher for many years.

At last, the researcher knows the project since the first idea about it had blossomed. This means that she knows beforehand some of the constraints and limitations of the project and may have bias toward some of the features (positively or negatively). By the same token, the researcher has her own perspectives on the Inputs, Processes, and Products of the Museu de Valores. Although she is not involved in the implementation of the future Museum of Economics, the identification of the current status of the Museu de Valores ('What is') may have been influenced by the researcher's perspectives.

CHAPTER 4: RESULTS

This chapter presents the results sub-divided into five sections. As qualitative research, the first section describes the profile of the respondents of the study, either if they have participated indirectly, through the records and notes from meetings; or directly, through interviews. The description of other documents and observations are deeply related to sampling; therefore, they have been described in Chapter 3.

The second to the fifth sections present the results according for each of the four research questions proposed in Chapter 1. Results for research questions #1, #2, and #3 are presented in the form of organizational elements, in accordance with the categorization established in data analysis. Results for research question #4 are presented in the form of a list.

Respondents' Profile

The respondents who have participated in the study through documents (records and notes from meetings conducted by the Museu de Valores team members) were: six of the nine current BCB's board members; two senior executives of the Museu de Valores; and six external stakeholders. External stakeholders were: two financial educators highly referenced from the field; one numismatic collector and sponsor of the Museu de Valores; and three digital influencers with millions of followers on digital media on financial education issues. The meetings were conducted when developing the project for implementation of the future Museum of Economics.

Participants who have attended the meetings which have generated the records and notes were professional experts from their fields with at least undergraduate degree (internal stakeholders have at least a masters' degree); considered to be financially literate; familiar with

financial education or economic concepts; and most of them were familiar with the Museu de Valores. 12 were male and two female participants. Time of experience varied. Regarding internal stakeholders, six of them have been working for the BCB for more than a decade, and two of them have joined the BCB less than three years ago. Regarding external stakeholders, all of them had at least five years of experience in their fields.

Regarding interviews with internal stakeholders, the four respondents were BCB's board members. Board members are responsible for one of the nine specific areas of the BCB (Presidency, Institutional Relations, Supervision, Economic Policy, Monetary Policy, Regulation, Administrative Affairs, International Affairs, and Licensing and Resolution), but they make organizational decisions in a collegiate manner. Three internal stakeholders interviewed were male and one was female. All participants held a master or a doctoral degree in Economics and time of experience of working for the BCB varied. Three of the interviewees did not have the chance to participate in the meetings conducted by the Museu de Valores team members when developing the project of the future Museum of Economics, either because they were not working for the organization or because they were unavailable at the time the meetings were conducted.

Regarding interviews with external stakeholders, the four of them were respected and referenced professionals in their fields. One respondent was a Brazilian financial educator; two were museum experts (from successful public museums); and one worked for the Brazilian Federal Fund for the Defense of Collective Rights. The least educated external stakeholder interviewed had an undergraduate degree; and the more educated had doctoral degrees. Two of them were male and two were female; and only one respondent had actually visited the Museu de Valores. All of them had more than five years of experience in their fields of practice.

The table below summarizes the respondents' profile. As time of experience was considered the time working for the BCB (even in different positions, if internal stakeholder); or in the field (if external stakeholder):

Table 4.1: Summary of Respondents Profile

Respondent	Type of stakeholder	Educational background	Field of Experience	Time of Experience	Source of Information	Has ever been to the Museu de Valores?
1	Internal	PhD	Economics	Less than 1 year	Interview	No
2	Internal	PhD	Economics	Around 3 years	Interview	Yes
3	Internal	PhD	Economics	Around 3 years	Interview	No
4	External	PhD	Business	More than 20 years	Interview	No
5	External	PhD	Psychology	More than 20 years	Interview	Yes
6	External	Master	Museum	More than 10 years	Interview	No
7	External	Undergraduate	Museum	More than 10 years	Interview	Yes
8	Internal	Master	Economics	Around 4 years	Interview and Records and Notes	Yes
9	Internal	Master	Economics	Around 4 years	Records and Notes	Yes
10	Internal	Master	Business	More than 15 years	Records and Notes	Yes
11	Internal	Master	Business	More than 15 years	Records and Notes	Yes
12	Internal	Master	Business	More than 20 years	Records and Notes	Yes
13	Internal	Master	Business	More than 20 years	Records and Notes	Yes
14	Internal	Master	Economics	More than 20 years	Records and Notes	Yes
15	Internal	Master	Business	More than 10 years	Records and Notes	Yes
16	Internal	Master	Economics	More than 20 years	Records and Notes	Yes
17	External	PhD	Economics	More than 15 years	Records and Notes	Yes
18	External	Unknown	Financial Literacy	More than 15 years	Records and Notes	No
19	External	Undergraduate	Numismatic	More than 15 years	Records and Notes	Yes
20	External	PhD	Financial Literacy	More than 10 years	Records and Notes	Yes
21	External	Undergraduate	Financial Literacy	Around 5 years	Records and Notes	No
22	External	Undergraduate	Financial Literacy	Around 5 years	Records and Notes	No

Results for Research Question #1

As the first step of the needs assessment proposed, research question #1 aimed to identify in what ways the current exhibits and programs of the Museu de Valores potentially promote learning among adult visitors. Perceptions about it were collected from 13 different

sources. Among them, results came primarily from documents, followed by interviews, and the observation in the Museu de Valores. For the 'What Is' status, 69% of the results are related to Inputs, followed by Processes (25%), and Products (3.8%). Outputs and Outcomes are responsible for 2.2% of the results.

Inputs

Results show that stakeholders believe that the Museu de Valores has obsolete and unattractive facilities that do not promote learning among adult visitors. Excerpts that represent this perspective are the following:

It is a museum that has stopped in time (Record 2).

The numismatic collection is presented in old ways (Record 3).

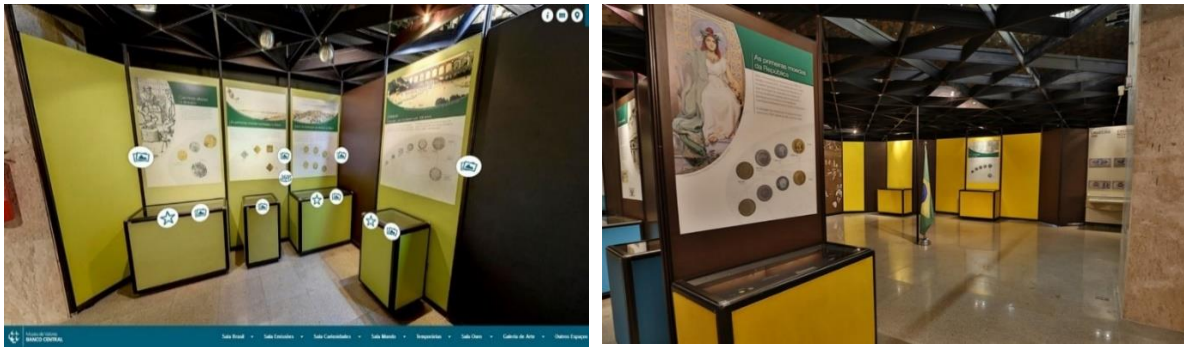
We have been unable to attract people know this story (Interview 4).

It is observed that there is a group of reasons that limits or prevents the broad audience to arrive (Banco Central do Brasil, 2018).

History of payments methods [presented in the exhibits of the museum] is outdated (Banco Central do Brasil, 2018).

The perception of obsolescence and unattractiveness of the exhibits of the Museu de Valores is also corroborated by the researcher perspective during observation, considering, for example, the old-design exhibit panels illustrated as following:

Figure 4.1: Exhibits' panels



Retrieved from: <https://www.poupardinheiro.com.br/museu-de-valores-do-banco-central>

Another perception of stakeholders about the facilities of the Museu de Valores is that learning of adult visitors is affected by the lack of adequate architecture and accessibility; facilities are tight, dark, lack adequate conservation and security, and do not offer adequate and complete services to visitors, like cafeteria, cloakrooms, parking, etc. The quotes that best represent these perspectives are the following:

The current Museu de Valores is too dark, with a low ceiling (Record 6).

Currently, the space receives 80 visitors at the same time, limiting the number of visitors (Banco Central do Brasil, 2018).

The museum has only a small shop. It lacks other services (...) like a coffeeshop or restaurant (...), toilette for families, a reception lounge, or a cloakroom (Banco Central do Brasil, 2018).

[The entrance] is intimidating (...), not visible and not inviting. The visitor must pass though security check points that are inadequate for external visitors (...) with access that are uncommon for external visitors [people who are not BCB employees] (Banco Central do Brasil, 2018).

[Facilities] do not attend patterns of accessibility, security, and conservation of the collection (Banco Central do Brasil, 2018).

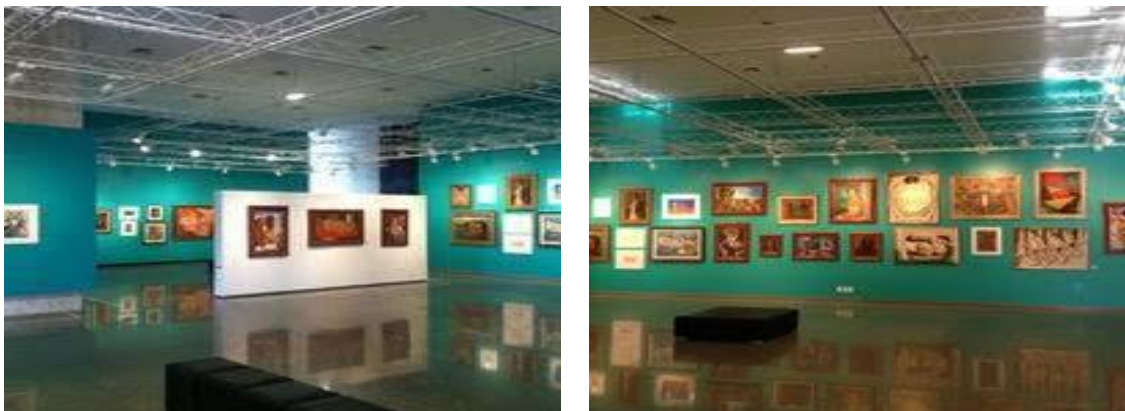
The electric and illumination systems need to be renewed, since they are from the 1980's and have not been updated since then (Banco Central do Brasil, 2018).

There is no emergency exit (Banco Central do Brasil, 2018).

The Museu de Valores keeps its two collections – numismatic and art – in two floors apart, not dialoguing between them. Most perceptions of stakeholders were regarding the numismatic collection. Interviews and observations did not provide references to infer stakeholders' perspectives about the art gallery. However, results from documents show that the facilities of the art gallery are adequate. The excerpt quote that represents this perception is below, followed by the images of the facilities of the art collection, which seems to be adequate.

The general conditions of the facilities of the art gallery are excellent, except for the light bulbs, which must be replaced by LED lamps (Banco Central do Brasil, 2018).

Figure 4.2: Facilities of the Art Collection



Retrieved from: <https://pt.foursquare.com/v/galeria-de-arte-do-banco-central-do-brasil/4bddcaae6c1b95216145ad0f>

Results for Inputs also show that the Museu de Valores lacks effective communication strategies; planning with emphasis on temporary exhibits; and information about adult visitors (Banco Central do Brasil, 2018)). The quotes that best represent these perceptions are the following:

The museum is too shy when communicating (Interview 8).

Temporary exhibits and events, which attract a greater audience, are rare in the museum (Document 2).

Regarding human resources, results show that the Museu de Valores lacks adequate number of employees, specialized skills for those who work at the Museum, and adequate training for the team. The following quotes, extract from Document 2, illustrate this perception:

Regarding training, there is a need to develop the team.

There is a need for new technical and managerial skills.

It will be necessary to develop a training program.

It is crucial that the museum reflects upon the necessary skills to develop a training plan.

Results show that stakeholders have perceptions not only about what the current Museu de Valores misses, but also to what it presents, with focus on the historical context. These are the quotes that best represent that:

I believe it is interesting the historical perspective (Record 5).

Today we have a museum that has collections that presents a bit of the past but, at the same time, prepares people for the future (Record 9).

In addition, documents and observation revealed that the Museu de Valores also presents specific content about history of money, including notes and coins from all around

the world; gold; and the history of Real (the Brazilian currency), distributed in five spaces: Brazil Room, Emissions Room, Monetary Curiosities Room, World Room, and Gold Room (Banco Central do Brasil, 2018).

Processes

22% of the results about Processes show that lack of interactivity is one of the main characteristics of the current Museu de Valores. These are the quotes that represent that:

There is little interactivity (Record 6).

The spaces lack interactivity (Record 10).

The level of interaction is not enough (Document 2).

In addition to these quotes, corporate documents do not mention any interactive attribute of the current Museu de Valores.

Regarding guidance and orientation of learning process in the Museu de Valores, results show that stakeholders perceive it as offering no guidance nor orientation to visitors, or they are unclear and confusing. The quotes that support these results are the following:

The museum is disarticulated, with exhibit rooms that do not dialogue with each other (Interview 4).

It is a mess: it is not clear what the museum offers (Interview 8).

The visitor arrives and goes on her own, leaving too much behind (Record 10).

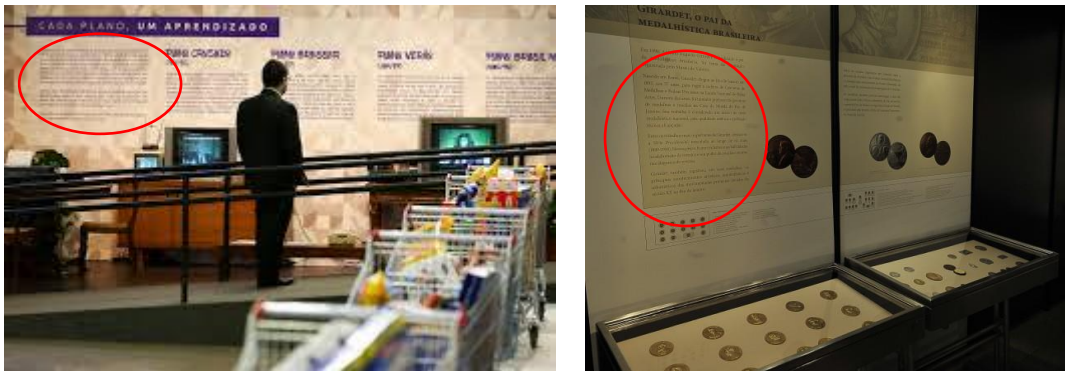
The lack of adequate signage contributes to the perception of stakeholders that adult visitors can easily get lost in the current Museu de Valores. According to the Museology Plan (Banco Central do Brasil, 2018):

Signage is deficient at the entrance of the museum; signage is not visible; distance between the two collections and the deficient signage inhibits the visitor to know them

both; the building lacks adequate signage through the exhibits; and there is no signage in foreign languages.

Language was perceived to be too deep, with long texts, privileging visitors that learn from reading. These are pictures that exemplify the long texts, with deep language, in the current exhibits of the Museu de Valores:

Figure 4.3: Examples of Employment of Language¹⁶



Results show that the Museu de Valores does not offer complementary activities to the visit (either pre, during, or post visit). In the past it was involved in specialized publications regarding its art collection, printed guides for museum visits, and support material for children (Banco Central do Brasil, 2018). These activities have been discontinued and currently there is not even a virtual museum (although its development is on progress). The Museu de Valores does not offer any extra learning program or activities to visitors like volunteering, lectures, courses, guided tours, apps, or any kind of interaction through social media or with the community.

¹⁶ Retrieved from: <https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRXGoXIYZyyKEGPYq8rJ1s8I5Q74wJopZVXJA&usqp=CAU>
And <https://memoria.ebc.com.br/2012/09/museu-do-banco-central-inaugura-exposicao-sobre-os-seus-40-anos-de-existencia>

At last, stakeholders' perspectives are that the current Museum is not targeted to adults. The quote that illustrates this result is the following, found in Interview 8: *The current learning design does not get to adults, and it should.*

Products

Results show that stakeholders have more perspectives about the Products that the Museu de Valores DOES NOT deliver rather than those it does. In this sense, the current Museum is not attracting the visitor to come back to the museum after a first visit, neither is making the visitor to feel sense of belonging. These are the excerpts that illustrate this perception:

The museum does not attract the visitor enough to come back to another visit
(Document 2).

The visitor cannot identify herself with anything at the museum (Interview 4).

Results show that stakeholders understand that the current Museum delivers some level of awareness to its adult visitors. The quote that illustrates that is the following:

The museum is very informative; I have found many things in it. It helps us to contextualize (Interview 8).

Outputs

Results show that the current Museum delivers satisfaction and financial literacy as its Outputs. These results, however, did not come directly from stakeholders, but they were inferred from documents and observation. The Museology Plan states that Satisfaction of visitors was registered by a third-party evaluator (TripAdvisor) as 4.5 out of 5 (Banco Central do Brasil, 2018). This mention suggests that the current Museum is concerned with Satisfaction of visitors and willing to deliver it.

Regarding financial literacy, the exhibit ‘Você já parou para Pensar?’ was a first attempt to deliver it to visitors. The following image illustrates this attempt, differing from other exhibits, presenting more appealing information than the traditional exhibits of the numismatic collections:

Figure 4.4: Exhibit ‘Você já parou para pensar?’



Retrieved from: <http://www.brasilianatrilha.com.br/2017/10/museu-de-valores-e-galeria-de-artes-do.html>

Outcomes

Perspectives of stakeholders about the Outcomes of the current Museu de Valores were not identified nor it was possible to be infer from documents, interviews, or observations.

Results for Research Question #2

As the second step of the needs assessment, research question #2 aimed to identify the perspectives of stakeholders of the Museum of Economics of Brazil about the ways adult visitors might learn from its future exhibits and programs. Results for research question #2 surpassed in 10 times more the number of references from research question #1. Not only the frequency of references was higher, but perceptions were broader, richer, and more diverse.

Results for research question #2 came primarily from documents (57%), but all sources of data had references about the ‘What Should Be’ learning design features of the future Museum of Economics of Brazil. Processes were responsible for 41% of all results for research question #2, followed by Inputs (34%), Products (22%), Outputs (2%), and Outcomes (1%).

Inputs

The primary focus of the perspectives of stakeholders regarding Inputs was the content that should be included in the exhibits and programs of the future Museum of Economics. Results show that inflation in Brazil is the content in the top of mind of stakeholders, followed by economics as science, history, and history of money:

- Inflation in Brazil: by inflation in Brazil was understood the perspectives regarding inflation, control of prices, and prices’ stability within the Brazilian context. The representative quotes are the following, considering that this perspective was found in Records 1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, and 14; Document 2, and Interviews 2, 6, and 8:

I was perusing a report research another day when I found out that inflation is the greatest fear of Brazilians.

From an economist point of view, the museum should bring the topic inflation in Brazil.

To understand what inflation is and controlling the prices is crucial for inhibiting inflation to come back. The explanation about what is inflation in Brazil should come from the BCB. I would like to see something that helped the ordinary Brazilian citizen to understand what the stability of prices was.

In truth, the museum should address the importance of controlling the inflation in the country. If you could include [in the museum] what inflation causes in the life of

people... People could understand how the inflation system works in Brazil, the indexes that we have, like IPCA.

- Economics as science: by Economics as science were understood the perspectives related to concepts of Economics such as exchange rates; scarcity; supply and demand rules; cost and benefits, incentives, and competition. The representative quotes are the following, extracted from Records 2, 6, 7, 8, 9, 11, and 1; Document 1; and Interviews 1, 2, and 8:

I see three bodies of knowledge that people should be given access to. One of them is basic concepts of Economics. What is Economics and why it is important. Goods are scarce and desire is endless.

Important message to be shared with adult visitors is how economy facilitates exchanges that require money, how it makes easier transactions and how it allows these transactions to happen.

It would be important to include (...) exchange rates like Dollar and Euro, because it is important to understand about the different currencies, how exchange rates work, and how it impacts the financial life of people.

The future Museum of Economics should turn Economics into an attractive topic.

I would like the adult visitor to think [after leaving the future museum], “Today I have learned something about the economy”.

If it is going to be a Museum of Economics, it should include the concept of finite resources.

Results for Economics as science as were corroborated by practices observed in the other museums. The MIDE, for example, included Economics as Science in its institutional mission:

Our Mission is to use Economics (...) as a lens through which people can discover how the word works. (MIDE, 2021).¹⁷

In addition, the exhibit on the second floor of the MIDE building, called Basic Principles of Economics, presented concepts such as scarcity, factors of production, economic agents, barter, and demand and supply. The Citéco also had exhibits presenting content like economic crisis, unemployment, and inequality. And the Economy Museum of the FED St. Louis presented, among the three museums observed, the deepest content regarding Economics as Science, including scarcity, human capital, and opportunity cost, including an interactive exhibit called Econ-on-Me.

- History: the results for history included the references regarding specific historical contexts of places, countries, or world. The representative quotes of the historical content are the following:

We are in Brazil, so naturally we should talk about our context. But I believe it would be cool if we could talk about the world as well (Record 1).

Brazil has a difficult history during 1980's that should be told (Record 2).

This is a discussion that arrived in Brazil because of the reforms – and this story will not abandon us (Record 4).

I would say (...) history is a good thing to include in the Museum (Record 5).

What always have impacted me was the history under the economic perspective (Interview 1).

It would be nice to have a museum that could retell the history under another perspective (Interview 2).

¹⁷ Retrieved from <https://www.mide.org.mx/primer-museo-interactivo-de-economia-del-mundo/>

It would be very interesting to keep the historic perspective that the Museu de Valores presents (Interview 6).

As a professional, [when I go to museums], I like to find history (Interview 8).

Results from observations show that the content History was present in the three museums. Both the MIDE and the Citéco are located in historical places, and they took advantage of that, enriching the visitors' experience in the museum with references to their buildings. The Economy Museum of FED St. Louis has a historic hall which reproduces the banking tellers from 1925, used to tell the history of that period, linking History to economic concepts. Pictures that illustrate that History are embedded in the museums observed are the following:

Figure 4.5: Historic building of the MIDE



Retrieved from: <https://www.mexicoescultura.com/recinto/55897/en/interactive-museum-of-economy-mide-.html>

Figure 4.6: Historic building of the Citéco



Retrieved from: <https://manuelcohen.photoshelter.com/image/I0000NvOkrALCImA>

Figure 4.7: Historic Hall of the Economy Museum of FED St. Louis



Retrieved from: https://www.tripadvisor.com/Attraction_Review-g44881-d559022-Reviews-Inside_the_Economy_Museum_at_the_Federal_Reserve_Bank-Saint_Louis_Missouri.html

- History of Money: results about the content history of money considered the references regarding the history, printing, mintage, and function of Money, regardless of the currency. The quotes illustrate these results, found in Records 1, 2, 4, 5, 9, 10, 12, 14, and Interviews 1, 2, and 7 are the following:

We have a rich history of money, but it should be updated. Tragic, but rich, so we have a good story to tell. The museum should tell the evolution of money exchanges, then the financial system, up to the coins and banknotes; the evolution of money is much more than showing the coins and notes. It is telling the evolutionary process. There is an interesting part of economic history, related to coins and banknotes, that could be explored. The functions of money are also important, so we could explore it more. We are changing to have virtual money, but the functions remain the same. I believe we need to contextualize history on the money in the world.

These results were corroborated by observations in the MIDE, the Citéco, and the Economy Museum of FED St. Louis. The MIDE presented a temporary exhibit which had the slogan ‘Not only the books tell stories, but the coins do also’, as well as its permanent exhibit

had topics such as the evolution of money and costs for producing coins and banknotes. The Citéco also included history of Money in its exhibits. At last, the Economy Museum of FED St. Louis included the content under a practical perspective, by showing the visitors how the coins and banknotes were replaced after hurricane Katrina.

Sustainability was the following content with more references from stakeholders. Contradictorily, the importance of not including the topic was also found in the perspectives from stakeholders but with fewer references. Results show that including sustainability in the future Museum of Economics, which was understood as scarcity and management of natural resources, is desirable. Representative quotes of this perception are the following:

I think that this topic [sustainability] is weird to include in the Museum (Record 4).

Talking about sustainability is crucial. The future museum should include sustainability issues under different perspectives (Record 7).

Green credit has an important role in the financial system and should be explored by the future museum (Record 14).

I believe that the key for the success of financial literacy [to be delivered by the future museum] is sustainability. It should be deepened presented and discussed by the museum (Interview 8).

Documents recognizably included sustainability as a content for the future Museum of Economics (Banco Central do Brasil, 2021). Regarding observations, the MIDE, beyond including the topic in its mission, had a whole floor with a specific exhibit dedicated to this content. The Citéco has complimentary sustainable activities such as programs of gardening. Only the Economy Museum of FED St Louis did not present content related to Sustainability in its exhibits and programs.

Interests were also identified as a content that should be included in the exhibits and programs of the future Museum of Economics. The results are related to math calculation of interest rates, including percentages, and the quotes that illustrate these results are the following:

I believe that the museum should address how to calculate interests (Record 3).

If we could demystify the idea of parceling the price without interests, it would be a good thing (Record 5).

From the perspective of an economist, the museum should talk about interests (Record 6).

Trying to explain the formula of compound interests will not be successful, forget it! I am talking about understanding that, when the person has a debt, she needs to pay it, and that's it (Interview 2).

It would be nice having like a game showing how investments and interests work (Interview 3).

The museum could teach how to run away from absurd interest rates (Interview 8).

Regarding observations, the content Interest was presented in the exhibits and programs of the MIDE and the Citéco, but the researcher did not observe any specific exhibit or program presenting it in the Economy Museum of FED St. Louis.

According to perspectives of stakeholders, futuristic content should be included in the future Museum of Economics. These perceptions were related to future situations, products, or systems of the financial and economic system that are in development or not even developed, and not available equally for populations. The quotes that illustrate the perspectives of stakeholders about the futuristic content are the following:

It is important to show the future like payment methods. For example, we need to talk about cryptocurrencies and other methods of instant payments, there are not available for everyone the same way (Record 1).

If I was going to divide [the content of the museum], I would include 80% about the present and 20% about the future (Record 4).

An important component of financial literacy is the future. Is cash going to disappear and people will use only credit card? Do we really need a card? Many shops around the world already have facial recognition (Record 8).

It would be nice if in the museum people could talk about the relationship with money in the future (Record 9).

So, we are facing payment solutions that were unimaginable. It is a matter of time that people can make payments only using their digital prints or the eye's iris. The museum should show that (Interview 7).

I believe [the museum] must present the past, present, and future. But past and present should not be the predominant part of it [future should].

What I would be willing to see [in the museum] is some contribution about the future. I like to see things ahead of our time (Record 14).

Regarding observations, the only museum that presented a Futuristic content was the MIDE, which had a new exhibit called “The Future of the Money”. The Citéco and the Economy Museum of FED St. Louis did not present Futurist content.

Other content that should be included in the exhibits and programs of the future Museum of Economics, according to stakeholders, are banking industry; multidisciplinary topics; inflation in the world; and monetary policy.

- Banking Industry: these perceptions were related to references on how the financial system works, and knowledge about financial products and services. The quotes that are representative of this perception are the following:

It is nonsense to say that banks like people who do not understand finance. Banks like people who are financially literate because they do not default, and a big part of the costs of financial system are due to defaults (Record 4).

People does not understand what a banking crisis is (Record 14).

The Strategic Planning document recognizably have included banking industry in the strategic objectives of the BCB (Banco Central do Brasil, 2021). The results are corroborated by observations. The MIDE has included financial services (part of Banking Industry) in its exhibits and programs, as well as the Citéco and the Economy Museum of FED St. Louis.

- Multidisciplinary content: by multidisciplinary content was understood the perspectives related to other areas of knowledge like psychology, biology, social sciences, and other sciences, not frequently associated to financial and economic issues. The quotes that illustrate this perspective are the following:

In such a masculine are of knowledge like Economics, to have other areas of sciences helping to answer the questions would be very cool (Record 8).

I would love if in the museum there were other sciences taking part in the discussions that before were private from the economic field (Record 10).

We are getting to the point when, in order to understand the economic phenomena, we will have to count on the expertise of psychologist, for example. This kind of adjustments I would like to see in the future museum (Record 12).

The world is becoming more and more complex, and the solutions will come from different fields, working together. The museum cannot embrace the idea that Economics is a matter of financial markets only or a distant policy (Interview 5).

Educational programs of the museum should promote meetings with experts from different fields. Financial education does not work alone. It needs the help from other fields (Interview 8).

Regarding observations, the Citéco was the only museum observed which has formally encompassed multidisciplinary content. The composition of its board counts on representatives from different backgrounds, from multidisciplinary areas of knowledge.

- Inflation in the world: it included the perspectives about the concepts of inflation and price stability (regardless of the context), and how inflation occurred in other countries and situations other than Brazil. Perceptions about this content were found in Records 1, 5, 7, 10, 11, and 14, and the quotes that represent these results are:

I believe it is nice to show inflation around the world. Inflation and how to control it are important issues anywhere.

One content that I believe it is spectacular is inflation. It is important to explain what inflation is in an accessible manner, not like the television does. It should be presented in a didactic and intelligent way. We need a great way to explain this 'thing' called inflation.

Regarding observations, both the MIDE and the Citéco had exhibits and programs with the content Inflation in the world. However, it was not observed similar content in the Economy Museum of FED St. Louis.

- Monetary Policy: these results included references related to monetary policy and its instruments.¹⁸ The representative quotes of these results are the following:

We should include monetary policies impacts in daily lives of people (Record 3).

A lot of people have difficulty in understanding in practice how the monetary policy operates (Record 6).

When people understand how the monetary policy operates with the discount rates, they realize that much about what is said [about the topic] is fake or superficial (Interview 2).

I would like to see some game where people could play a role as if she was a central bank, implementing monetary policies (Interview 3).

Stakeholders presented a second group of content to be integrated in the future Museum of Economics, with fewer references about them. They are:

- History of Real: was understood as the trajectory of the Brazilian currency (Real), including its predecessors (the Real was adopted in Brazil in 1994). Excerpts that illustrate the inclusion of history of Real as a content of the future Museum of Economics, found in Records 1, 6, 9, 10, 12, and 14, and Interviews 2 and 6 are the following:

The current museum has nice things that should continue in the future Museum of Economics, like the history of our currency [Real]. I believe we need to explore closely the exhibits about the Plano Real.

What is more important for adult visitors is to have some exhibit where they can walk through the history of our currency. I consider that the history of Real is epic to include

¹⁸ Traditional instruments of monetary policy are such as reserves' requirement, open market operations, discount rates, and management of national reserves.

in the future Museum. We could attract people to the museum by including easy contents, like the implementation of the Real.

- Payment Methods: related to payment methods used to pay for a service or product and to transfer money to others. Currently, payment methods include cash, checks, credit cards, prepaid cards, debit cards, and mobile payments. The quotes that represent these results are the following:

The exhibits should present credit card and electronic methods of payment (Record 1).

The Museum of Economics aims to explore the economic concepts by bringing concepts and answers to doubts of population related to methods of payment (Interview 2).

Results about the inclusion of the content payment methods in the future Museum were corroborated by observations in the three museums (the MIDE, the Citéco, and the Economy Museum of FED St. Louis), since all of them presented content payment methods in their exhibits and programs.

- Present: related to references of current situations, products, or systems of the financial and economic system that are already in place, available to any citizen, and not included in any other specific subcategory. The quotes that represent these perspectives were found in Records 2, 3, 4, 9, and 14, and these are their representatives:

To make the museum a space for reflection not only about the past, but also about the present. For the content about the present, we should include recent innovations from the sector. If I was going to divide the content of the museum, I would include 80% about the present and 20% about the future.

- Retirement: related to retirement plans or programs, quotes of these results were found in Records 2, 6, and 10, and the best excerpt that represent this perspective is the following: *The museum should discuss alternatives for retirement.*

Regarding observations, the Citéco was the only foreign museum that presented a specific exhibit or program with the content Retirement and pensions.

- Past: these results are related to past situations, products, or systems of the financial and economic system that were not included in any other specific subcategory. The representative quotes are the following:

You can share the message (...) how it affects the life of citizens, how it was in the past and how it is today (Record 3).

If it was a museum that talked about the past, the present and the future, it should have different approaches (Record 9).

- Insurance: related to insurance products or services. There was only one quote about it, found in Record 2: *The Brazilians need to learn how to be prepared for unforeseen situations (...) they deal poorly with insurance situations).*

Despite the limited references from stakeholders, the content Insurance was presented in exhibits and programs of the MIDE and the Citéco. The Economy Museum of FED St. Louis did not present exhibits nor programs with this content.

- Trade: related to perspectives of stakeholders about commercial transactions among nations. The quotes that support the inclusion of this content in the exhibits and programs of the future Museum of Economics are the following:

Foreign trade is not attractive, but it is important to include (Record 3).

One content that should be in evidence is trade. The museum could explain it better for its visitors (Record 10).

Regarding observations, the three museums observed (the MIDE, the Citéco, and the Economy Museum of FED St. Louis) presented exhibits and programs with Trade content.

- Gold: related to extraction, manipulation, and commercialization on the metal gold in its different forms. The quote that represents this perspective was collected from Interview 7 and it is the following: *I think it would be extremely interesting to tell the story of the gold nudges.* Regarding observations, among the three foreign museums, the Citéco was the only museum observed that presented an exhibit with the content gold.

- Statistics: the quote that represents the desire of stakeholders to include the content statistics in the exhibits and programs of the future Museum of Economics was found in Interview 1 and it is the following: *There are many ideas for taking statistics to adults in the museum.* Regarding observations, the Citéco presented more than one exhibit including Statistics. The MIDE presented one exhibit with Statistics content, and the Economy Museum of FED St. Louis did not present the content Statistics.

- Financial Stability: the quote that represents the desire of stakeholders to include the content financial stability in the exhibits and programs of the future Museum of Economics was found in Record 3 and it is the following: *[If presented in the exhibits and programs of the future museum] the individual could associate his/her life to financial stability.* Among observation, the Citéco was the only foreign museum observed that has presented the content financial stability in its exhibits and programs.

- Taxes: the only quote that supports the inclusion of the content taxes in the future Museum of Economics was found in Record 5 and it is the following: *It is important*

to understand why we have to pay taxes, the purpose of this system. Regarding observations, none of three foreign museums observed presented the content Taxes in their exhibits and programs.

Besides the content, results show that stakeholders have concerns about the money resources of the future Museum of Economics. Results about money resources include alternatives to fund and manage the future museum like partnerships, concerns about the capacity of the museum to be self-funded (today it is funded by the BCB's budget), being a low-cost facility, and receiving external funding. Perceptions were found in Records 1, 8, 9, and Interview 4, and quotes that represent these concerns are the following:

We could make a partnership with the future regulatory agency of insurance and pension plans; could attract some external company to develop some exhibit for the museum and, in return, we could advertise the company.

It may happen to have a lot of people interested in making a partnership to fund some of our programs. It would be great. Another way to attract greater audience would be to establish partnerships to take the exhibits to other cities or institutions.

The opening of exhibits in other cities would be possible through partnerships or special projects.

The museum should have its own life, apart from the BCB, inclusive in what regards its funding. I think we should fund a way so the museum could be self-funded. (...) It cannot depend on the BCB's budget.

Besides its own budget, the future Museum of Economics should seek for new sources of revenues to have a hybrid model of funding, combining public, private, and self-funding.

I believe the museum cannot depend on the BCB, even for budgeting purposes.

The museum needs to have its own personality, completely apart from the BCB, its own communication channels, as a single brand. I aim to see the spinoff of the museum from the BCB, including its funding.

We could try to have an external funding. It may be cheap for external companies, in a win-win situation.

Regarding observations, both the MIDE and the Citéco operates through partnerships with public and private sectors in temporary and permanent exhibits and programs. The MIDE presented a whole exhibit funded by VISA, and the Citéco presented external partners and patrons. It was not identified partners in the exhibits and programs of the Economy Museum of FED St. Louis.

Results show that stakeholders would like that the future Museum of Economics has broad facilities, with space for circulation; complete in the sense to offer to visitors a pleasant experience (with cafeteria, shops, parking, etc.; was aesthetically attractive (in other words, that is beautiful); with adequate architecture and accessibility; clean; and with internet. Perceptions about the facilities of the future Museum were found in Records 1, 2, 4, 5, and 6, and the quotes that represent these perspectives are the following:

I like museums where exhibits are not close to one another and there is plenty of space among them. I wouldn't like to find a museum where visitors get crowded. I like museums that have plenty of space.

Good museums sponsored by other central banks have a pleasant area to visit, sometimes with a garden or a restaurant, some place where to feel comfortable. It would be interesting to offer complete services to our visitors, such as restaurant or cafeteria, family restrooms, among others, to promote that they stay longer in the museum.

I would like to find a museum that is beautiful and clean.

Currently, to attract the attention of visitors is difficult, but it has to be done.

One of the most important things is to provide 3G or 4G internet for our visitors while in the museum.

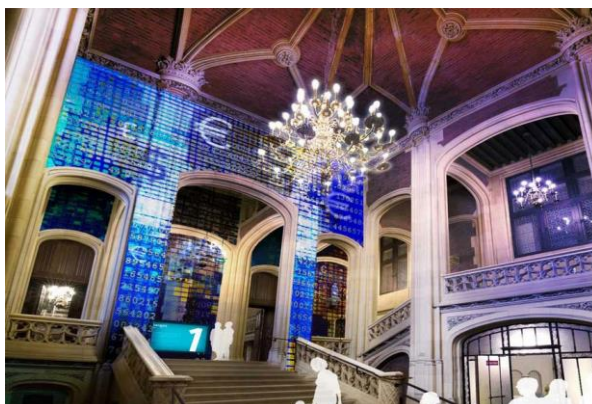
Regarding observations, the following pictures illustrate the facilities of the three museums observed. They illustrate that facilities are new, attractive, there are space for circulation of people, light is employed as a component of space, and there are visual aspects to enchant the visitors.

Figure 4.8: Facilities of the MIDE



Retrieved from: http://sic.gob.mx/ficha.php?table=museo&table_id=1096
Facilities of Citéco

Figure 4.9: Facilities of the Citéco



Retrieved from: <https://up-magazine.info/en/arts-3/8434-citeco-le-musee-de-l-economie-ouvre-a-paris/>

Figure 4.10: Facilities of the Economy Museum of FED St. Louis



Retrieved from: <https://oculuslightstudio.com/projects/federal-reserve/>

Stakeholders also desire that the future Museum of Economics has adequate numbers of employees, with specialized and specific skills, and continuous training. Representative quotes of these perceptions were found in Records 6, 8, and 9, and they are the following:

We have accumulated some knowledge about running the museum and having it for the future museum is crucial. The museum should have skilled facilitators, not only to guide the visitors, but also to prepare materials. We need skilled professionals to help us delivering our message. It is crucial that the team receives training. It would

also be nice if the future museum had its own employees running an educational program. The size of the team should follow the number of initiatives.

Results also show that the future Museum of Economics of Brazil should have effective communication strategies; have more information about the adult audience; and adopt the value quality to guide its initiatives. The quotes that represent these perspectives are the following:

Regarding communication and media, or the museum should have a strong strategy, or it won't attract visitors (Interview 4).

I think that we could get to know better the adult visitor (Interview 8).

The worst thing that could happen to the future museum would be losing quality of its exhibits and programs (Interview 4).

Planning was also desired to be included in the exhibits and programs of the future Museum of Economics, especially in what regards temporary exhibits. Results show that having temporary exhibits that change along the time is an important planning instrument that should be adopted by the future Museum of Economics. The representative quotes of this perception, found in Records 2, 9, 12, and Interview 7, are the following:

It should be a museum in constant renovation. What would make the visitor to come back to the museum is having something new, a temporary exhibit. The agenda of January should be different from the one for December. To have an area dedicated to temporary exhibits is important.

At last, results show that the integration (or segregation) of the current numismatic and art collections seem not to be a great concern of stakeholders. Nevertheless, the few perspectives about it were divided into: (i) keeping them together and integrated; or (ii)

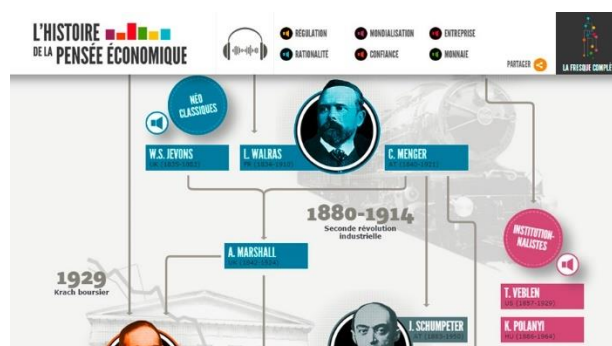
disposing the entire art collection. The quotes that represent these perspectives are the following:

I have doubts about how to integrate [the art collection] into the Museum of Economics. They are distinct as water and wine. They do not mix. We have a beautiful art collection, but how does it dialogue with the BCB? (Record 2).

The integration of both collections is incomplete (Banco Central do Brasil, 2018).

Regarding observations, the three museums observed did not maintain art collections. Nevertheless, the Citéco had integrated art pieces into its exhibits, by including portraits frescos when presenting the content economic history. The Citéco has incorporated art pieces to illustrate the great names of Economics, like the following:

Figure 4.11: Art in the Citéco



Retrieved from: <https://www.citeco.fr/en/history-economic-thought-interactive-multimedia>

Processes

The results for Processes were responsible for most of the stakeholders' perspectives about the ways adult visitors might learn from the future exhibits and programs of the future Museum of Economics. Results show that the primary attribute to be incorporated is, by far, Interactivity in its different modalities, like visual, audio, gamification, hands-on, employment of technology, and multiple approaches. The only source of data that did not present

perspectives about the interactive attributes of exhibits and programs was Interview 7. All other sources presented some perspective about interactivity, and the representative quotes of these perceptions are the following:

To talk about money while interacting seems to be kind of obvious.

I think there is a lot of technology, a lot of audiovisual resources that we could better explore [in the museum]. You need to interact with the visitor. If the museum exhibits have with too many narratives [without interactions], it will become boring. I would not like the museum to be static, where the adult visitor is passive. The Museum of Economics could be a lab, to test hypothesis.

Currently there is a lot of information available in the world. To capture the attention of people you need to interact with them, to deliver the message you want to deliver.

I have the idea of the future museum almost like a real-life experiment. As much interactive the better, as much as possible. The interactivity, at first, is only funny. But if you involve the visitor, learning starts to happen. I hope the visitor actively participates in the exhibits and learns by doing. With interactivity the visitor can have fun and learn at the same time.

The museum needs to be completely interactive, making sense through exploration of senses. With interactivity, we hope that the visitor has an experience that is sensorial, emotional, and physical.

I don't want the museum to be with too much reading, without interaction. I want a modern museum.

We need to increase interaction with the adult visitor. We need to have [an exhibit] like a welcome card, short messages, great visual aspect, dynamic, then you get the

attention of the visitor. The museum should be a place to present concepts in a visual and light manner.

A very happy approach to include is the visual one. When entering the museum, if the visual effect of the exhibits does not impact the visitor, it will inhibit learning.

Learn with games is more enjoyable. The game makes you learn. Gamification arrived to stay. Gamification is one learning design employed to engage visitors in exhibits.

I would like the future museum to offer multiple approach experiences to its visitors, including multisensorial. The museum could show the same message in different ways.

We need to present the concepts in different ways, for different visitors.

Personally, I prefer a traditional learning design, but it is necessary to understand audience and employ different approaches.

Today we have modern ways to attract the attention of people. Technology has done a great job, like virtual reality. There is plenty of room to employ more technology in the future museum.

Regarding observations, the three museums observed employed interactive learning design features in their exhibits and programs. The following pictures illustrate the interactivity in the observed museums, with games, and people that seem to be having fun.¹⁹

¹⁹ Images were retrieved from public databases. Retrieved from: <https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQb2FuqUorCNNTdp4zokgOk4YbWGoIBfw6Mhg&usqp=CAU> and https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcRYnV_SeWrLhgtwNs96TWqyuHjw4Bm3AzmKUG&usqp=CAU

Figure 4.12: Interactivity in the MIDE



Figure 4.13: Interactivity in the Citéco²⁰

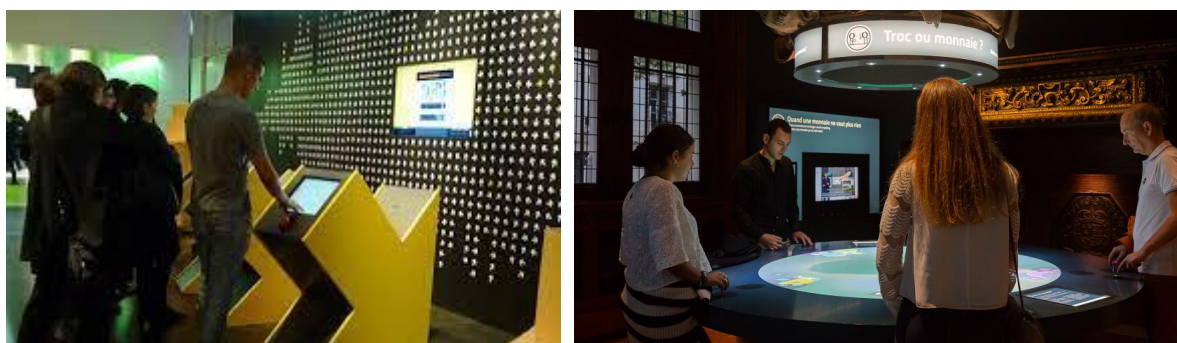


Figure 4.14: Interactivity in the Economy Museum of FED St. Louis²¹



²⁰ Images were retrieved from public databases. Retrieved from: <https://www.citeco.fr/en/all-you-need-know-about-economics> and <https://www.oui.sncf/article/la-cite-de-l-economie-citeco-a-paris>

²¹ Images were retrieved from public databases. Retrieved from <https://pgavdestinations.com/portfolio/inside-the-economy-museum/> and https://www.tripadvisor.com/LocationPhotoDirectLink-g44881-d559022-i257549379-Inside_the_Economy_Museum_at_the_Federal_Reserve_Bank-Saint_Louis_Missouri.html

Results show that, following interactivity, exhibits and programs that contain real-life problem-solving context are desired to be integrated in the future Museum of Economics. According to stakeholders, adult visitors should find in the future Museum cases that are similar to the situations they live, enabling them to make sense and connections for promoting learning. These perceptions were found in Records 1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13, and 14, and Interview 1. The representative quotes of this perspective are the following:

The most important is to show the impacts in the lives of visitors. We need to link the financial world to the life of the visitor, like talking about mortgage or buying a car. If we have practical examples, we'll have an engaging dialogue with the visitor. It would be interesting to find examples of things that people know, like Coke or Big Mac. Talk about a reality that makes part of people's life.

I would like to help visitors to understand 'What is the truly influence of exchange rates in my life' or 'Why doing business with China is so important?' They need to know what is IOF [a Brazilian tax over financial transactions], how to transfer money.

The worst thing to happen would be if exhibits were disconnected from visitors' life. Concepts are too abstract; for making sense, people need to see it contextualized in their daily lives. Managing scarce resources is what a person does from the moment she is born until she dies. We need to help people to see that.

How nice would be to find a simple example, which the visitor could see herself. If you are sleeping you are spending money, you have to pay the rent and pay for energy [so the museum must find real life examples].

Regarding observations, the three foreign museums observed (the MIDE, the Citéco, and the Economy Museum of FED St. Louis) presented exhibits and programs with real-life

problem-solving contexts, where visitors could identify themselves with the content exposed and make the necessary connections for learning.

According to stakeholders, having complementary activities to the visit is another attribute that should integrate the future Museums of Economics. According to them, complementary activities encompass pre, during, and post visit, and they are not limited to educational programs, lectures, courses, websites, apps, events, seminars, volunteer programs, and mediation and collaboration programs. Perspectives about complementary activities were found in Records 1, 2, 3, 4, 6, 9, 13, and 14, and Interviews 1, 2, 4, 5, and 8. The quotes that best represent these perceptions are the following:

A virtual museum could attract people. You could include some things at the museum's website.

I would make some partnership with other financial literacy platforms that are run outside the BCB. The museum should interact through Instagram, Facebook, YouTube or Twitter. We could engage people through social media.

The museum could have an educational program. I wish there were deeper material that I could read during or after the visit. Different project for different audiences. For example, one-hour weekly meetings with a specific group, or courses, seminars, or lectures for other groups. Investing in specialized publications is a nice way to make the adult to come back to the museum.

We could have different cultural activities, even on other topics, happening in the museum, like cocktails and a DJ. People go firstly for the fun, but then they would come back for the exhibit.

I would have complementary activities in different levels: something before, to prepare the visit; some experience during the visit; and something after.

The visit could have some previous tutorial or check list before happening. Guided tours according to age, cards to guide the visit... we would like to do everything.

Results show that stakeholders also have perspectives regarding the language to be used in the future Museum of Economics. Stakeholders expect language to be simple, in an easy way to be understood, and to be empathic to the visitor, like speaking in the same way the visitor would speak. Regarding how deep the language and texts should be, results show that desires for the future Museum of Economics are divided into: (i) language that is shallow, promoting the understanding of a broader audience; or (ii) language that is deep, privileging the visitors who aim to have a deeper understanding or with previous knowledge on the topic.

In addition, result show that language should be subtle (with subtle messages, when the learner does not realize that he/she is learning) and have texts in another language other than Portuguese. Perspectives about the language that should be employed were found in Records 2, 3, 4, 5, 6, 7, 8, 9, and Interviews 1, 2, 3, 4, 5, 8. The quotes that are representative of these perspectives of stakeholders about language are the following:

There are many initiatives out there... but are successful those who speak a language that the visitor hears. The challenge is to include subtle messages.

Economists have the bad habit of using complicated language to explain simple things. But the basic of Economics is simple. We need to be humble when talking to the visitor. People talk about Economics with long explanations in formal language. This is everything that museum cannot do.

In the museum, if you have a language that is too deep, you have the risk to deliver a bad experience to the visitor. It is possible to present Economics in an accessible way, but the role of the museum is to engage the visitor. And then, when he/she wants to learn, we must have the complimentary programs [to support leaning].

To translate the price of money, the price of decisions into a simple language, which the ordinary citizen is able to understand. This is probably the best thing that the museum can do, and it is not easy to achieve.

The language to be used is the most important thing at the museum. We need to say the same thing in many different languages, so different people can understand, like having a rapper talking about economy.

It will be a big challenge to use a relaxed, cool language. In the slam people talk in their own language. The museum needs to speak that language if it wants those citizens to visit it.

It is better to have a simpler language and leave the economists dissatisfied than having a deep language and leave the citizen without learning. Language that is too deep may scare the first-time visitor.

If we have a language that is too simple, believing that most people do not know what we are talking about, the museum is going to be too superficial and educated visitors will not be interested in visiting it.

At the museum, information and language should be simple and shallow, with links for those who want or need more. You need to work language and communication in different levels.

Cultural accessibility, herein understood as openness to diversity, is another Process that according to stakeholders should integrate the exhibits and programs of the future Museum of Economics. Its concept includes primarily the level of education of audience (are the exhibits and programs be designed to more or less educated visitors?), level of income of audience (does it affect the design?), and geographical location. Perceptions about the need of having cultural diversity in the future Museum were found in Records 2, 4, 5, 7, 8, 9, 11, 12,

13, and 14, and Interviews 1, 2, 6, and 7. The quotes that represent these perceptions are the following:

There is a chance that the museum does not attract all the targeted audience – and if it does, there is a chance that people who go to the museum will feel excluded anyway.

Central banks are intimidating, and even the know-it-all visitors may feel excluded.

The audience should range from uneducated people to very educated, what is a challenge. Differences in income and social class cannot be a problem and the museum must embrace visitors from different social-economic realities.

How do I take the museum for the people who are in Roraima or Portugal? Not everybody can go to Brasilia, how do we reach these people? People should be able to access the museum from anywhere.

Besides cultural accessibility, results show that stakeholders also expect to find the Neutrality in the exhibits and programs of the future Museum. This means that the future Museum of Economics should be able to present ideas, concepts, and knowledge without taking any ideological or governmental position. Perceptions about neutrality were found in the following sources: Records 2, 4, 5, 6, 8, 11, and 14, and Interviews 1, 2, 3, 6, and 7. Representative quotes are the following:

The museum should be as ‘plain’ as possible. The museum should avoid any remission to political parties or political persons. It shouldn’t have any ideology or try to change visitors’ ideology about what is presented.

We must be a museum of the State, regardless of the politicians that are elected. I don’t want any picture, any political symbol. I would not include the boring ‘ideology stuff’.
I hate museums that want to impose me a thought or idea.

The museum should avoid offensive and/or politically incorrect topics, preventing damages to the image of the by including dubious interpretations. With all due respect to political aspects, the last decade brought a lot of fragilities to our economy and society. The museum cannot discuss that.

Results show that reflective discourse, that promotes reflection, doubts, and help generating alternatives and solutions for visitor's problems, should integrate the exhibits and programs of the future Museum. Rather than providing an answer, reflective discourse should instill questions and curiosity in the future Museum visitors. Perspectives about reflective discourse were found in in the following sources: Records 1, 3, 4, 5, 12, Document 2, and Interview 1. The representative quotes of this perspectives are:

The whole exhibit needs to talk to the visitor. The museum needs to tell the story and to make questions at the same time. When you start to tell a story and to make questions for the audience (...) there will be great stories.

By the process of posing a question is when the learner learns the most. Posing a question in the mind of the [museum] visitor is always a good thing.

Regarding observations, the MIDE presented Processes that promote reflective discourse by starting labeling of exhibits with a question, leading the visitor to think and make his/her own reflections. Reflective discourse was not identified in the Citéco nor in the Economy Museum of FED St. Louis.

The implementation of learning designs according to specific audiences was also considered relevant by stakeholders to be included in the future Museum of Economics. In stakeholders' perspectives, learning designs should be implemented for adults and children accordingly. However, part of stakeholders advocated for the primacy of learning design for children over adults, and a smaller parcel of the opposite: the future Museum should prioritize

the learning of adults over children. Results show, though, that most stakeholders believe that the future Museum of Economics should have learning designs for both children and adults, including other specific groups of visitors. Perspectives were found in Records 1, 2, 3, 4, 6, 7, 8, 9, 10, 14, Document 2, and Interviews 1, 2, 4, 5, and 8, and the excerpts that best represent them are the following:

We cannot have a museum designed only for children neither only for adults. I believe we can have [in the future museum] exhibits designed for all ages. The message should be the same for adults and children – only the design should be different. If we had a huge museum, we would present different exhibits for each audience [children and adults].

The museum should be for children. For children is easier [to deliver the message] because he/she can play and learn at the same time.

Courses and museum are developed for adults [not for children].

Children are very adaptable. I would put my efforts in thinking how to deliver the message to elderly people, in a way that is useful for them. The complimentary activities should be offered to specific groups, according to their characteristics.

Results about guidance and orientation show that half of stakeholders believes that exhibits should embrace SDL and adult visitors should go free to plan, chose their learning path, and evaluate their own learning. The other half considers that adult visitors should be guided in the Museum, considering the cognitive nature of the future Museum. Representatives of these perspectives are the following, excepted from Records 3, 4, and 6, Document 2, and Interviews 5 and 8:

The museum should allow the person to find his/her own ways to learn. The exhibit should be designed in a way that the visitor has an active participation in the learning

process, without any pre-defined path or guidance. I want to be able to choose to see what interest me most.

The museum should have prepared people to guide the visitor, and other guides to follow, like a manual, simple, but telling the visitor what to see and where to go. The manual could have priorities: 'must see' attractions; interesting attractions; and to indicate those that the visitor could see only if she/he had time.

At last, results show that stakeholders believe that chronology and teachable moment of exhibits could impact learning. The representative quotes of this perspective are the following, excerpted from Record 1, 12, 13, and 14, and Interview 7:

Our history is rich. Better if we could see it [in the museum] in a timeline. It is nice when the museum has a sequence, a story that shows that progression in time. When there is a chronology to follow, you can better understand [the message]. Many museums lose opportunities because they are unable to follow the sequence of things and facts.

The person will make sense if it happens when she needs it. It is very common someone to say 'this does not affect me'. She will learn only when it was really affecting her – the same message, different moments.

The guy with a difficult problem will [visit the museum and] want to know 'what do I do now'? How can this help me? Everybody has a problem to solve.

Products

Results show that stakeholders believe that the future Museum of Economics should deliver pleasure, fun, and entertainment; impact of affective memory; understanding; critical

reflection; awareness; change in life and behavior; and willingness to return to the museum as its Products.

- Pleasure, fun, and entertainment was identified in almost sources as a desirable Product of the future Museum of Economics. Their representative quotes are the following, excerpted from Records 2, 3, 4, 5, and 6; Document 2; and Interviews 2, 3, 5, 6, and 8:

Museum is a place for enchantment. The important is to make that the visitor have fun. People must arrive here [at the museum] and have a pleasant journey, without only texts to read. It should be one of the most extraordinary museums in the world. The museum should create experiences that are interesting for everybody. I think we should include jokes, with humor. To ally education and fun is good, because you engage the visitor when the exhibit if fun. But it is challenging. I don't want to find anything boring. It is so nice to enter a museum a feel embraced by it, letting you to go with the flow, as if it were only you [in the exhibit].

- Impact of affective memory was the second Product in the mind of stakeholders, related to personal examples, memories, and remembrances with affection of situations that were connected to museums (or should be). Results about Impact of affective memory was spread among Records 1, 4, 10, 11, 12, 13, and 14, and Interviews 1, 2, 3, 4, 5, and 6, either related to museum or financial issues. The representative quotes of the results regarding the impact of affective memory are the following:

We are all selfish. What attract us are the things that affectively impact us. Once I was in a museum and there was an attraction that I could sense the smell of something burning. This got into my memory, every time I smelled smoke, I remembered that sensation at the museum. It is so nice to take the memory from the museum everywhere,

years after the experience. Talking about the museum I now remember that, and I remember the sensation that I had that the world was so much bigger that I thought. When I was a kid, I received a box with currencies form all around the world... I remembered my grandma talking about that [inflation]... When I was studying the History of Real I remembered that (...). I think that stories like that are so cool! So, to revive this kind of memory [personal memories] or to build some for those who do not have it, would be important. If the museum is good, it will emotionally bond the visitor, establishing an affective connection.

Many people did not experience an economic crisis. From those who did it, is important to remember and keep these stories. We need to show people and to make they remember how difficult times are.

The Product Understanding was considered more than a simple content: it meant that the visitor could make his/her own learning connections about that specific topic. It was considered a Product because it needs Inputs (in this case, content) to be delivered to the visitor individually. Results about understanding contemplates five main subcategories: the role of central banks; the role of people in the economic scenario; the role of savings and making a budget; the responsible use of credit; and the role of the government in the economic scenario. They were found in the following sources: Records 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, and 14; Document 1; and Interviews 1, 2, 3, 7, and 8.

- Role of central banks: is related to the mission of central banks, including the BCB, their importance, how they contribute to the economy of countries, and how they operate. The quotes that are representative of these results are the following:

Our mission [BCB] is to deliver a solid and efficient financial system. The museum can deliver the message of solidity or efficiency. Efficiency impacts more the life of the

citizen. It is important that the museum delivers the message of what happens when there is not a central bank, when there is not an institution to regulate and supervise [the financial market].

One aspect that there is not in the [current] museum and we should include is the role of the BCB in controlling the inflation. [Talking about] the role of the agents for the functioning of economy (...) the BCB, how it works to maintain the purchase power. We should also include the functions of a central bank, clarifying that what the BCB does is important, giving details about how it works, and how it impacts the life of people. The museum may help people to understand which is our mandate.

Regarding observations, the three foreign museums (the MIDE, the Citéco, and the Economy Museum of FED St. Louis) presented Understanding the role of central banks as their Products.

- Role of people in the economic scenario: it refers to the role of citizens in the economy. The quotes that are representative of these results are the following:

The second [result of the museum] should be how the individual is embedded in the economic world, as a producer and consumer of values. The main deliveries should be people understanding that they have a role in the economic scenario and that their individual decisions impact the whole economy. I would be please if at the end [of the exhibit], the visitor had this understanding: what I do influences the whole economy. The museum should include what may happen if people do not understand its message.

Among the three foreign museums observed, the MIDE presented an exhibit that reinforced the relation of every person to the economy, and how economy operates from the individual decision. It was not identified specific exhibits nor programs related to the role of people in the economic scenario in the Citéco nor in the Economy Museum of FED St. Louis.

- The role of savings and making a budget: it considered the perspectives about the importance of savings and preparing budgets in the life of citizens. The quotes that are representative of these results are the following:

If I could choose only one message, it would be to control the personal budget. The visitor must understand the basics of savings, and the difference between 'need' and 'desire'. The museum should have something visual, where the visitor could understand, in five minutes, the importance of savings.

- The responsible use of credit: considered the concerns of stakeholders with the decision making of citizens when consuming credit products and services. The quotes that are representative of these concerns are the following:

These are things that the museum should clarify to people, like interests, like which product [of credit] is better. The visitor should know which decision [regarding which credit to take] is better for him/her.

- The role of the government in the economic scenario: is related to the macro role of government when participating in the economy (instead of issuing policies). The quote that is representative of this perspective is the following: *[The visitor] should think of government as his/her own house, with his/her own budget.*

Regarding observations, Understanding the role of government in the economic scenario was observed only in the MIDE, which presented an exhibit explaining how the government operates in the economy.

- Critical reflection: results about critical reflection show that stakeholders desire that visitors of the future Museum of Economics can reflect upon his/her experience in the Museum, changing beliefs and feelings, leading to learning (Brockett & Hiemstra, 1991). They

were found in Records 2, 4, 10, 12, Document 2, and Interviews 1, 3, and 6. The excerpts that are representative of these results are the following:

Museum is a place to reflect upon things and beliefs. The visitor should leave [the museum] thinking: 'Am I doing everything correctly?' Who do you want to be in the future, as a person and regarding your money? The most important learning component is when you pose a question, when you reflect upon something. The visitor needs to re-think, to think upon his/her beliefs [regarding economy and finance] at least ten times. If the museum delivers some reflection to the visitor, it is going to last.

- Awareness: was understood as the 'click' about financial issues that visitors could have during exhibits and programs of the future Museum of Economics. By awareness was considered the insights that instigate visitors have about financial issues. The quotes that are representative of this result are the following, found in Records 2, 4, 6, 8, 9, 12, and 13, and Interviews 7 and 8:

The best way the museum can contribute to learning is when the visitor leaves the museum to find more information about what he/she saw during the visit. The museum should open a little window, inviting people to come in. It is necessary to wake up the curiosity [in the visitor]. Our goal is to deliver to the public a glimpse of knowledge; to give some kind of insight. Learning is like that... you give a baby step, and you are seduced. To transform a person is a visit of two hours is hard to happen.

- Change in life and behavior: is related to the changes that visitors make in their lives and behaviors after visiting the future Museum, as a product of his/her experience. The quotes that are representative of this perception are the following, found in Records 2, 5, 6, 8, 9, 10, 11, 12, and 13, Document 2, and Interview 1:

The visitor must understand that it is necessary to make choices in life. The challenge is to show that financial planning worth it, and that life does not end on today's sunset. I would be satisfied if the visitor, entering his door back home, thought 'I need to make a spreadsheet and control all my expenditures'; or 'So, here there is something useful for my life... so this means that I need to understand it better.' If the museum is successful, people will believe it is possible to change. We have to include something that helps people making their dreams come true.

- Willingness to return to the museum: is related to the will of visitors to go back to the museum for a second/third/fourth.... visit after the first experience. The quotes that are representative of this perception are the following, excerpted from Records 2, 5, 9, 12, Document 2, and Interviews 5 and 7:

You need to create the reason to people to come back, and what would make the visitor to come back to the museum is having something new. Museums need to avoid offering the same visit, they should offer a new experience each time. I would be glad to finish the visit wanting a bit more of it. I want the visitor to return [to the museum] many more times, not only each five months.

- Emotions: results show that stakeholders expect that the future Museum of Economics delivers the following emotions and feelings to its visitors: sense of belonging and resiliency (to overcome difficult times). The quotes that are representative of these results are the following, found in Records 1, 2, 4, 5, 8, 9, 13, Document 2, and Interviews 4, 6, and 7:

The museum should talk about our place in this world. I hope that is an embracing museum, where the visitor leaves full of memories and good feelings. I wish the visitor could leave having the feeling of 'Ok, I know it was not easy, but today we are better

than we were in the past'. We need to search for the similarities among different people and to focus on that. The visitor must feel involved and being part of that.

Outputs

Results show that, for the stakeholders, financial literacy should be the primary Output of the future Museum of Economics, followed by satisfaction; influence of others to come to the museum; and learning (in general). The quotes that best represent these perceptions are the following, excerpted from Records 1, 2, 3, 4, 5, and 6; Document 2; and Interviews 1, 2, 3, 7, and 8:

The museum is the great deliverer of financial literacy and delivering financial literacy is part of our mandate. Visitors should leave [the museum] saying: 'I liked this museum'.

Outcomes

Results show that stakeholders agree on the only Outcome of the future Museum of Economics: the economic well-being of the society. The quotes that are representative of these results are the following, found in Records 1, 4, 8, 14, and Documents 1 and 2:

We need to deliver to citizens the message 'You will be able to live better with less.'
People are rethinking what should be their well-being and we can contribute to that.
At the end, people are trying to be happy, trying to manage their money in order to have a good life.

Results for Research Question #3

The research question #3 aimed to explicit the differences between the current ways of promoting learning among adult visitors at the current Museu de Valores and stakeholders'

perceptions about the future Museum of Economics of Brazil. As the third step of the needs assessment, the results for this research question consist of making explicit the divergencies about the attributes that the current Museu de Valores has and those desired for the future Museum of Economics. The differences between them are big because the current Museum lacks most of the attributes desired.

Inputs

The differences are in the following Inputs: content, facilities, money resources, human resources, planning, communication strategies, information about adult audience, integration of the museum's collections, and value Quality.

The differences related to content are the more relevant and broader. Results show that, to promote adult learning among adult visitors, the current Museu de Valores presents less content than the desired for the future Museum of Economics. While the permanent exhibit of the current Museu de Valores presents four major blocks of content (History, History of money, History of Real, and Gold), the desired content for the future Museum encompasses 19 major contents: History, History of Money, Gold, History of Real, Payment Methods, Economics as Science, Inflation in the world, Inflation in Brazil, Banking Industry, Insurance, Retirement, Sustainability, Monetary Policy, Financial Stability, Interests, Trade, Taxes, Statistics, and other Multidisciplinary content. Other aspects related to content refer to Past, Present and Futuristic content. The current Museum has a clear Past content only, while the future Museum should have a Past, Present, and most of all, a Futuristic content in its exhibits and programs.

The facilities of the current Museu de Valores are perceived as being tight and lacking adequate illumination, conservation, security, and architecture and accessibility. In addition,

they cannot be considered 'complete' because they fail to offer to visitors a complete and pleasant experience supported by cafeteria, shops, parking, toilet for families, etc., and the provision internet access during the visit. The inadequate facilities contribute for stakeholders' perceptions that the current Museum is obsolete and unattractive, negatively impacts learning, and urges change.

Money resources are given since the Museu de Valores budget is part of the BCB's budget, therefore suffering all the constraints that public resources do. Perceptions of stakeholders about the current money resources were not manifested. However, according to them, to eliminate or diminish budgetary drawbacks, it will be necessary to develop partnerships, to disassociate the Museum of Economics from the BCB, to low the developing and maintenance costs, or to grant external funds to maintain it, revealing the under covered perception that the current Museum lacks adequate money resources.

Other Inputs were not identified in the current Museum and should be provided to the future Museum of Economics. The Museu de Valores lacks adequate number of employees, specialized skills, and adequate training for the team. Planning efforts lacks the inclusion of temporary exhibits, although there is the perception that, when implemented in the past, the few temporary exhibits were successful. Communication strategies should be more aggressive and institutionalized, helping to attract new visitors. And it is desired that the Museum of Economics have more information about the adult audience, to better understand their specific needs and expectations.

About the integration of the numismatic and art collections, results show that there is a divergence about what is desired for the collections of future Museum of Economics. They should they be completely integrated or completely disassociated - not only the two collections apart, but the entire art collection should be apart from the future Museum of Economics.

At last, regarding the value quality, stakeholders did not make clear what is desired for the future Museum about this feature. The definition of 'quality' may be broad and change according to personal perspectives. However, from the quotes excerpted it is possible to deduce that the main concern is with the deterioration and obsolescence of the exhibits and programs of the future Museum along the time.

Processes

The biggest gap between the current and desired status of the learning design features is related to interactivity. While the current Museu de Valores does not have interactive exhibits and programs, it seems to be a consensus that, to promote learning among adult visitors, the future Museum of Economics should be interactive, employing multisensorial and multiple approaches (including visual, audio, touching, and smelling), intense use of technology, and games.

The existence of complementary activities is another difference between the current and the desired status of the learning design features. Despite in the past the Museu de Valores offered a few extra activities to visitors, currently they are not offered anymore. To support learning of adults in the Museum of Economics, complementary activities should integrate its exhibits and programs in the form of educational programs, lectures, courses, websites, apps, events, seminars, volunteer programs, virtual museum, and mediation and collaboration programs.

About guidance and orientation, currently the museum is considered to have poor guidance and to be confusing, with inadequate signage contributing to that. For the future Museum of Economics, guidance and orientation must be clear in two ways: i) adult visitors may be free to plan, choose their path, and evaluate their own learning (so the learning

experience in the museum would have none or limited external guidance), or ii) adults visitors receive clear guidance in the learning process, including clear and visible signage. Regarding Language, stakeholders believe that it should be simple and able to create empathy with the visitor, what does not happen in the current Museu de Valores. Most of stakeholders believe that language should be short, assertive, and concise.

Stakeholders also believe that, in what regards Processes, the future Museum should include real-life problem-solving contexts, cultural accessibility, neutrality, reflective discourse, chronology and teachable moment, and learning designs according to specific audiences. The current Museum lacks to present daily live contexts and to promote connections to people. Regarding cultural accessibility, results show that the Museu de Valores does not intentionally employ efforts and features to attract visitors from different backgrounds, and future Museum should include them. Regarding neutrality, results show that the current Museum does not deliver messages that are partisan because it has a limited content that does not provoke ideological discussions. For the Museum of Economics, with the augment of the content presented, it is expected that the information present is without ideologies.

About reflective discourse, the current exhibits of the Museu de Valores do not instigate visitors with questions, what is expected for the future Museum of Economics. About chronology and teachable moment, results show that the current Museum presents some attempts to include them in its exhibits, although perceived as unsuccessful. For the future Museum of Economics, it is expected that chronology and teachable moment help promoting adult learning and do not confound visitors like it is today.

At last, regarding learning designs to specific audiences, the current Museum does not employ specific learning designs for children nor adults. Despite its main audience is of schoolchildren, it does not mean that the museum was intentionally designed to promote

learning among them – it happened to be. The exhibits and programs of the future Museum of Economics, though, should employ learning designs for different audiences like children, adults, and even specific groups, like elderly people.

Products

Stakeholders believe that visitors of the current Museu de Valores do not return for a second visit in the Museum; they do not feel as belonging to the contexts presented; but they end up having some awareness about the issues presented during the visit. For the future Museum of Economics, though, results show that it should deliver pleasure, fun, and entertainment; impact of affective memory; understanding of the role of central banks, role of people in the economic scenario, role of saving and making a budget for personal finances, responsible use of credit, and role of the government in the financial and economic scenario; critical reflection; more awareness; change in life and behavior; willingness to visit the museum again; and the emotions sense of belonging and resiliency.

Outputs

The current Museu de Valores does not have clear Outputs. For the future Museum of Economics, perspectives of stakeholders are that it should deliver primarily financial literacy, followed by satisfaction, influence of others to visit the museum, and learning in general.

Outcomes

The current Museu de Valores does not have clear Outcomes. For the future Museum of Economics, perspectives of stakeholders are that it should contribute to economic well-being of society, which is the societal mission of the BCB.

Table 4.2: Summary of the differences between ‘What Is’ and ‘What Should Be’

	WHAT IS	WHAT SHOULD BE
INPUTS	<ul style="list-style-type: none"> • Content: history, history of money, history of Real, and gold, with focus in the past. • Facilities: tight, dark, not conserved, insecure, inaccessible, and incomplete. • Money Resources: linked to BCB’s budget. • Human Resources: lacks adequate number of employees, skills and training. • Planning: rare temporary exhibits. • Communication strategies: shy. • Information about adult audience: none or rare. • Collections: both, not integrated. 	<ul style="list-style-type: none"> • Content: history, history of money, gold, history of real, payment methods, economics as science, inflation in the world, inflation in Brazil, banking industry, insurance, retirement, sustainability, monetary policy, financial stability, interests, trade, taxes, statistics, and other multidisciplinary content, with focus in the Future. • Facilities: broad, conserved, secure, accessible, and complete. • Money Resources: self-funded. • Human Resources: adequate number of employees, skills and training. • Planning: many temporary exhibits. • Communication strategies: aggressive. • Information about adult audience: plenty. • Collections: both, integrated; or art dismissed. • Value Quality.
PROCESSES	<ul style="list-style-type: none"> • Not interactive. • There are not complimentary activities. • Guidance and orientation are poor and confusion. • Labeling and signage are poor and inadequate. • Language is deep and long. • No real-life problem-solving context. • No features that promote cultural accessibility of visitors. • Not intentionally designed to promote neutrality. • No reflective discourse. • No clear chronology. • No learning designs. 	<ul style="list-style-type: none"> • Interactive features, in different modalities. • Complimentary activities. • Guidance and orientation are clear, either self-directed or oriented. • Labeling and signage are rich and adequate. • Language is short, direct, and concise. • Real-life problem-solving context. • Features that promote cultural accessibility. • Exhibits are intentionally neutral. • Promotes reflective discourse. • Chronology and teachable moment. • Learning designs for specific audiences.

(cont. Table 4.2)

PRODUCTS	<ul style="list-style-type: none"> • Limited awareness. • Lack of willingness to return to the museum. • Lack of sense of belonging. 	<ul style="list-style-type: none"> • Pleasure, fun, and entertainment. • Impact of affective memory. • Understanding of the role of central banks, role of people in the economic scenario, role of saving and making a budget for personal finances; responsible use of credit; the role of the government in the financial and economic scenario. • Critical reflection. • Awareness. • Change in life and behavior. • Willingness to visit the museum again; and • Emotions: sense of belonging, and resiliency.
OUTPUTS	<ul style="list-style-type: none"> • Not clearly defined. 	<ul style="list-style-type: none"> • Financial literacy. • Satisfaction. • Influence of others to visit the museum, and • Learning in general.
OUTCOMES	<ul style="list-style-type: none"> • Not clearly defined. 	<ul style="list-style-type: none"> • Economic well-being of society.

Results for Research Question #4

The research question #4 aimed to define the learning design features that should be integrated into the exhibits and programs of the future Museum of Economics of Brazil. As the last step of the needs assessment proposed, the list results from the combination of the attributes identified among the different organizational elements (Inputs, Processes, Products, Outputs, and Outcomes) in the previous research questions.

The attributes may contribute to more than one learning design feature, in complementary ways, but the features themselves are mutually exclusive, following the criteria presented in Chapter 3. Instead of a rigid list, results for research question #4 aim to subsidize the planners of the Museum of Economics in what regards adult learning when

designing and implementing its exhibits and programs. According to results, the learning design features for adults that should be integrated in the Museum of Economics of Brazil are the following:

- a. Consider that Individuals' Differences May Impact Learning.
- b. Promote Opportunities to Reflect on the Information Presented.
- c. Encourage Active Engagement with the Information Presented across Modalities.
- d. Design Experiences that Build on Previous and Succeeding Learning.
- e. Allow Flexibility for Selecting a Particular Path to Acquire Information.
- f. Facilitate Memory by Connecting Information with Personal Experience; and
- g. Arrange the Environment in a Way that it Enhances Learning.

A. Consider that Individuals' Differences May Impact Learning

This feature describes the capacity of exhibits and programs to respond and interact with different characteristics of visitors, adapting the way the information is presented according to individuals' profiles. It encompasses the personal characteristics of visitors that may impact the learning process, such as demographical, geographical, socio, cultural, learning styles, and educational backgrounds. This feature not only acknowledges that individual differences may impact learning, but it also considers the differences when designing the learning experience.

Visitors with different characteristics may have different learning needs and motivations. Although it seems obvious that exhibits and programs should consider individuals' differences, in practice this is a feature not easily implemented. The current Museu de Valores, for example, does not embrace this feature. There are endless differences among people, and they may impact the learning process in different levels. In a nutshell, this feature

considers the influence and the impact of visitors' personal characteristics in their learning process, and the ability of the Museum to respond and take advantage of this diversity.

This feature was generated from results identified in different organizational elements. From Inputs was identified the need for having more information about the audience. This is a pre-condition to consider individuals' differences in the learning process – that is to know the differences among visitors. From Processes came the concerns of stakeholders in having different learning designs to specific audiences and having a museum that is culturally accessible. From Products was identified the desire that visitors feel that they belong to the context of the Museum. All these results are directly related to the possibility of establishing a connection between the different profiles of visitors and the exhibits and programs of the future Museum.

Attributes of the feature 'Consider that Individuals' Differences May Impact Learning' include adequate and adaptative language, personalized communication strategies, employment of real-life problem-solving contexts, and employment of neutrality. According to stakeholders, adequate and adaptative language is crucial to cause empathy in visitors; and communication strategies need to be targeted according to the audience to be effective. In addition, real-life problem-solving contexts gets visitors closer to the information that is presented, helping them to see how the content fits into their daily lives, promoting sense of belonging regardless of their profiles. Neutrality, by its turn, prevents ideological discussions that frequently arise from individuals' differences.

Examples of this feature include the employment of idiomatic expressions and other languages in labels and texts. In a country with so many regional differences, exhibits and programs should incorporate different geographical expressions, so the visitor could see him/herself in the exhibits regardless of the content, and understand the message. Another

example is to employ ordinary contexts from real life, more adequate to the visitors' moment in life. For example, in financial contexts, adults will hardly identify themselves when talking about 'monthly allowances', but they are familiar with the expressions and implications of 'weekly salary'. Nonexamples include the use of technical language which are familiar only for highly educated visitors or professionals from the field; standardized communication strategies; and employment of abstract or theoretical contexts.

B. Promote Opportunities to Reflect on the Information Presented

This feature describes the capacity of exhibits and programs to make visitors to reflect upon the information presented and their own experience, being able to transfer the learning to outside the museum context. If visitors are not able to reflect upon what is presented in the exhibits and programs and transfer it to real life, the learning process will not meet its objectives. Regarding financial literacy, self-reflection of the learner about his/her own financial habits and behaviors is crucial for having a healthy financial life. According to this feature, it is necessary that exhibits and programs of the future Museum promote opportunities for reflection, and not only present the information in a unidirectional way.

This feature was primarily generated from result from Processes and Products. Results for Processes showed that without making meaning from the concepts presented and dialoguing with them, it will be difficult to financially educate adult visitors. Financial education initiatives have a strong cognitive component, so reflective discourse helps visitors to make meaning from the information presented. Products, by its turn, have generated the desire that the Museum employs critical reflection, delivers awareness about the importance of financial issues, and change the financial lives and behaviors of its visitors. It is through

critical reflection that adult visitors change their life's framework, becoming aware of and incorporating the information presented.

Examples of this feature include questioning news and common facts from national and worldwide media. Another example is to stimuli visitors with questions at the beginning of each exhibit, providing answers to the questions only at the end of the visit - or not providing them at all - giving visitors the opportunity to remain thinking about the questions presented after the visit. Other examples include making the visitor curious about a topic and having a special physical place for reflection, with quizzes and surveys where visitors can think about the application of the learning into their lives. Nonexamples include presenting a linear exhibit that only provides information without generating any kind of doubt or question in the mind of visitors, taking for granted that everything that is presented is the unquestionable truth, without consequence to the lives of people.

C. Encourage Active Engagement with the Information Presented across Modalities

This feature is related to the opportunities offered to visitors to actively interact and participate in the exhibits and programs using different senses. It also encompasses the employment of technology as a facilitator between the visitor and the exhibits and programs of the Museum, working as an incentive for engagement. In a nutshell, this feature describes the possibility of visitors to have an active role in the learning process in the museum in different manners, interacting with the information that is being presented.

'Encourage Active Engagement with the Information Presented across Modalities' is a feature that was generated primarily from the results from Processes. In fact, this feature was identified by stakeholders as one of the most desired learning design features to promote adult learning. Most of stakeholders used the word 'interactivity' to describe the active engagement

across modalities. Results for this feature were also generated from Products, translated by the desire that the Museum of Economics delivers pleasure, fun, an entertainment to its visitors. Promoting pleasure, fun, and entertainment for visitors is probably the most common manner to encourage actively engagement in museums.

The attributes of this feature include the visual, audio, smelling, tasting, touching, and gamification approaches that should be integrated in the exhibits and programs of the future Museum. Despite it is related to individuals' different learning styles, it must not be confused with the feature 'Consider that Individuals' Differences May Impact Learning'. One is focused on the incentives for promoting active engagement, and the other on the differences of the visitors. If combined, they have the potential to enhance learning, but they are not the same feature, having different attributes. According to this feature, exhibits and programs which do not employ different modalities discourage active engagement.

Examples of 'Encourage Active Engagement with the Information Presented across Modalities' include integrating games in exhibits; hands-on activities like lifting a gold bar; and role playing of visitors. Interactive resources may also be employed, such as touching screens, exhibit rooms with sounds and audios; and display of objects that visitors can touch and take home, like coins, bills, and medals. Technology, for example, may be employed by allowing visitors to use their cell phones as part of the exhibits, interacting with visitors through QR Codes and bar scans. A nonexample is to have a traditional exhibit that presents objects to visitors in a unidirectional way, not allowing visitors to touch objects nor exploring senses such as smelling, tasting, and listening.

D. Design Experiences that Build on Previous and Succeeding Learning

This feature encompasses offering different opportunities for visitors to learn before, during, and after the visit to the Museum, engaging and reinforcing learning overtime. It also encompasses the possibility of returning to the museum in different occasions, either to have different or repeated experiences. This feature is comprehensive, not being limited to the Museum boundaries but focused on the learning experience as a whole, including different moments in time.

‘Design Experiences that Build on Previous and Succeeding Learning’ was generated primarily from the results from Processes, most of them related to the attributes of offering complementary learning activities to the museum visit. Results from Processes revealed that stakeholders’ desire that visitors have access to the information presented in different levels, according to their interests, in different moments. From Inputs came the stakeholders’ desire that the Museum of Economics includes more temporary exhibits in its planning, increasing the opportunities to visitors go to the Museum. And from Products was identified the stakeholders’ desire that visitors return to the Museum after the first visit, either to re-visit permanent exhibitions or to visit a temporary exhibit.

Examples of experiences that build on previous and succeeding learning include the implementation of attributes like quizzes, videos, extra reading materials, and checklists that can be handled to visitors before visiting the museum or a specific exhibit, to prepare for the visit and align expectations about what visitors are going to find. During the visits, examples of this feature include having access to interactive apps with deeper information, participation in volunteer programs, and having real-time lectures along the exhibits. After the visit, examples include access to virtual exhibits with extra information, audios, videos, curses,

lectures, and returning to the Museum for another visit. These attributes should be employed in a complementary manner, enabling visitors to learn from different sources, building upon experience and through time, in continuing and growing learning.

E. Allow Flexibility for Selecting a Particular Path to Acquire Information

This feature describes the attributes, activities, material, and approaches that provide guidance and orientation to visitors when transiting from one exhibit and program to another to acquire information. Allowing visitors to have flexibility for selecting a particular path demands a sense of unity of the entire Museum, showing cohesion among exhibits and programs, facilitating visitors to make meaning from what is presented independently from how they choose to be oriented, if self-guided or with external guidance. It allows visitors to perceive the connection and the relationship among exhibits and programs in a coherent manner, without fragmentations – regardless of the type of collection, sequence of exhibit, or path chosen.

This feature was generated from results from Inputs and Processes. Inputs have generated results about the integration or segregation of the numismatic and art collections of the Museum, a specific context of the case studied. From Processes came the results about self-guidance and orientation; concerns about labeling and signage; and the perspectives about chronology and teachable moment. All these results have indicated the stakeholders' concerns with preventing visitors to feel lost among the exhibits and programs of the future Museum.

Attributes of 'Allow Flexibility for Selecting a Particular Path to Acquire Information' include integrating the numismatic and art collections of the Museum as if one was part of the other, without physical distinctions or separation, linking them and using the art pieces as part of the content for financial literacy. Another attribute is to provide clear guidance and

orientation to visitors who are self-directed learners, as well to provide guidance and support for those visitors who needs assistance to navigate in the Museum. In addition, clear labeling and signage that do not confound visitors are also attributes of this feature. The employment of time in a way that it encourages the visitor to learn, not necessarily obeying the chronological timeline of years, but being arranged in a manner that makes sense for the information presented, is also an attribute of this feature.

Examples of this feature include having supporting material for the visitors that are self-directed such as hand-outs, audio guides, checklists, and access to apps that the visitor can access according to her/his own rhythm. For the visitors who demand more guidance and orientation, examples include allocating facilitators and guides throughout the museum, in strategic places and positions, to give visitors the guidance needed. Examples of chronology and teachable moments include employing a timeline based on the financial needs of visitors instead of chronological years. One nonexample is to maintain both collections apart, without cross references, without link among them, as if they were completely separated collections, as it is today. Another nonexample is not providing any kind of guidance support to navigate in the Museum, letting visitors lost about where to go, what to visit, and what is the relationship among exhibits and programs.

F. Facilitate Memory by Connecting Information with Personal Experience

This feature describes the ability of exhibits and programs to connect the emotions, memories, and remembrances of visitors to the information presented in the exhibits and programs of the future Museum, linking them to their personal experiences. It includes positive feelings as happiness, joy, and tenderness as well as negative feelings like fear, tension, sadness, and uncertainty. This feature represents the non-cognitive component of learning

related to the feelings of visitors, and it encompasses not only the potential of enhancing learning, but also the acknowledgement that, if not adequately employed, feelings may inhibit learning instead of enhancing it.

‘Facilitate Memory by Connecting Information with Personal Experience’ was generated primarily from the results from Products. According to stakeholders, though, what allows the connection between memory and learning is the content presented, especially the content Inflation. Despite content is not considered to be a feature per se, in the context of the case studied it is deeply related to visitors’ feelings, memories, and past experiences. Brazil had a historical period of high inflation, which was very difficult for millions of families. Making visitors to remember the challenges of that period and how it affected the lives of people - and learn from it - is probably the biggest challenge of the planners of the Museum.

The most important example of this feature is undoubtedly related to the content Inflation in Brazil. However, when it comes to financial issues, other feelings may also facilitate memory and connect information to personal experiences. Realizing dreams, for example, is a powerful motto for financial literacy and easy to connect to the memory of people – almost everybody has or had a dream. In this sense, employing personal stories and storytelling of people who have their dreams came true through financial education is a good example of how to integrate this feature into the exhibits and programs in the Museum of Economics. Nonexamples include presenting information with facts and numbers without personal stories; or giving the impression that the period of high inflation in Brazil was ordinary, a period like any other in history, without mentioning the impact on the memory, feelings, and lives of millions of Brazilian families.

G. Arrange the Environment in a Way that it Enhances Learning

This feature describes the physical characteristics of the Museum of Economics of Brazil that contribute to make visitors to feel safe and comfortable once they are inside its facilities, allowing them to commit to the learning process. It encompasses the physical environment of the Museum, with attributes such as light, architecture, acoustics, temperature, security, and conservation, among others. Arranging the environment in a way that it enhances learning may support or inhibit the learning process. The physical aspects of the surrounding learning environment are important so the visitors can focus on the exhibits and programs, learning from them.

Results for this feature came basically from Inputs and stakeholders have many perspectives about the environment of the future Museum. Nevertheless, it is possible to correlate the impact of facilities generated in Inputs to attributes. The implementation of temporary exhibits, for example, will probably demand an appropriate spacial arrangement to be implemented. Critical reflection, an attribute of the feature ‘Promote Opportunities to Reflect on the Information Presented’, may benefit from having appropriate spaces that enhances self-reflection in adult visitors (Dufresne-Tassé, 1992; Hein, 2006a; Monk, 2013).

Most of the examples of this feature are related to arrange the physical environment in a way that visitors have pleasure and feel safe to be and stay in the Museum. Offering services to visitors such as cafeteria, cloak room, toilettes for families, restaurant, and parking, are examples of this feature. Other examples include having natural light and ample corridors, with visible labels, having an adequate emergency exit, abundant and comfortable chairs, and accessibility for disabled visitors, among others. They are all attributes that aim to allow

visitors to experience the Museum by leaving behind concerns with the physical environment around them.

Nonexamples include having space facilities where visitors feel cold and tight, have difficulty in seeing, it is noisy, they feel hungry, thirsty, and feel insecure. In fact, the arrangement of the environment is so important that the definitions about this feature are the most urgent among all learning design features since they are going to be the first learning design feature to be implemented, during the implementation project already on course.

CHAPTER 5: CONCLUSION

The purpose of this study was to identify the stakeholders' perspectives about which learning design features for adults should be integrated in the exhibits and programs of the future Museum of Economics of Brazil. To fulfill this purpose, the study has answered four specific research questions, each one as a step of the needs assessment proposed. The summary of the results from these questions are the following:

- The current Museu de Valores lacks adequate features to promote adult learning.
- There are new Inputs, Processes, Products, and Outputs that should be integrated into the exhibits and programs of the future Museu of Economics to promote learning among its adult visitors.
- Promoting learning among adult visitors in the future Museum will demand a whole different Museum because the discrepancies between the current and the desired learning design features for adults are huge.
- To promote learning among adult visitors, the future Museum should integrate the following features: (a) Consider that Individuals' Differences May Impact Learning; (b) Promote Opportunities to Reflect on the Information Presented; (c) Encourage Active Engagement with the Information Presented across Modalities; (d) Design Experiences that Build on Previous and Succeeding Learning; (e) Allow Flexibility for Selecting a Particular Path to Acquire Information; (f) Facilitate Memory by Connecting Information with Personal Experience; and (g) Arrange the Environment in a Way that it Enhances Learning.

The identification of the learning design features, though, does not conclude the study, since there are discussions, implications, and recommendations for the integration of these features into the Museum of Economics of Brazil. In this sense, this chapter presents three sections. The first one discusses the literature that supports the identified learning design features. The second section presents the practical implications of integrating them into the exhibits and programs of the Museum of Economics of Brazil. At last, the third section presents final recommendations and opportunities for future action.

Discussions

The list of learning design features presented in the research question #4 were the result of a growing construction. In the first three research questions, results were categorized into organizational elements, theoretically grounded on the OEM, to facilitate the alignment between the learning design features and the organizational efforts. However, the learning design features for adults, result of the fourth research question, was organized in the form of a list, grounded on other literature besides the OEM.

The first research question allowed the researcher to assess the current state of the Museum, which was clearly not designed to promote adult learning. It constitutes, in fact, a good nonexample for all the identified learning designed features for adults. The absence of attributes and features that promote adult learning is not due to any kind of negligence or disinterest from the current Museum's team members. On the contrary, Museum's team members have been aware of the museum's limitations and have improved what was possible to enhance learning among its visitors along the years.

The 'What Is' status identified in research question #1 reflects the lack of consistent investment in the Museum for succeeding years, as a consequence of the budgetary constraints

that are so common to the public sector. It also reflects the focus of former stakeholders on the numismatic collection, which despite being relevant for the cultural heritage of the country, is not aligned with the current BCB' strategic agenda. Since the opening of the Museu de Valores decades ago, there was a clear shift on the Museum's Ideal Vision from the numismatic perspective to a financial literacy perspective. Only now, with the implementation project of the future Museum of Economics, there is opportunity to align the design features to its Ideal Vision.

About the second research question and the identification of the 'What Should Be' status, it is important to emphasize that the results show the perspectives of THESE specific internal stakeholders. Because board members of the BCB have fixed mandate, internal stakeholders will leave their positions after four years (exceptionally they can stay up to eight years). This means that, chances are that the senior executives assessed in the study will be no longer stakeholders when the Museum of Economics of Brazil opens in 2024. The future stakeholders may have completely different perspectives about the exhibits and programs of the Museum of Economics.

It is true that needs assessments have validity in time. However, the alternative of entirely changing exhibits and programs of the Museum each time the stakeholders change, at least for the concrete case study, is not feasible. Alternance in power is common and desirable to public institutions like the BCB and the Museum of Economics of Brazil. What can be done is to implement exhibits and programs that are more democratic, open, and flexible, contributing to promote learning among adult visitors regardless of who the stakeholders are. In addition, being supported by literature may help mitigating the impact of the change in stakeholders' perspectives, since they have been the focus of previous studies and may be

found among the best practices in the field. It is by discussing the theory that practice may be strengthened.

In this sense, the first feature, ‘Consider that Individuals’ Differences May Impact Learning’, is embedded in the central assumption of Andragogy that adults learn differently from children (Knowles, 1981; Knowles et al., 2015). Among the individual differences that may impact learning are the different learning styles, supported by Kolb’s model of Experiential Learning (Kolb, 1981; Kolb, Boyatzis, & Mainemelis, 2000). One of the attributes of this feature, the employment of real-life problem-solving contexts, is also heavily supported by literature. Discussed in *Andragogy, Experiential Learning, Informal Learning, and Financial Literacy*, real-life problem-solving contexts provide the link between cognitive contents and the awareness and changes intended by financial education efforts.

Having information about the audience is crucial to be able to Consider that Individuals’ Differences May Impact Learning. It involves personal and genetic history of museum visitors such as experience, background, interests, motivations, and skills, which is crucial to understand the interests, expectations, and desires of museum visitors (Dudzinka-Przesmitzki & Grenier, 2008; Falk & Storksdieck, 2005a; Rennie & Johnston, 2004). The need of having information about visitors’ profile to promote learning is supported particularly by the personal context dimension of the Contextual Model of Learning of Falk and Dierking (2000), which stated that personal characteristics of museum visitors may interfere in the learning process.

The decision about the target audience of the future Museum will certainly impact the ability of the Museum to be culturally accessible. Cultural accessibility, which is an attribute of the feature ‘Consider that Individuals’ Differences May Impact Learning’, is grounded on the social context dimension of the Contextual Model of Learning, which counts on social

interactions among individuals to promote learning (Falk & Dierking's, 2000; Maxwell & Evans, 2015). In addition, this feature counterposes the critiques over Andragogy that it ignored sociocultural factors and marginalized groups (Baumgartner, 2003b; Hartree, 1984; Lee, 2003).

The second learning design feature, 'Promote Opportunities to Reflect on the Information Presented', has reflective discourse and critical reflection as its main attributes. Reflective discourse is grounded on Transformative Learning, and it focuses on the content (Brockett & Hiemstra, 1991; Mezirow, 1981; 1994; 1997). Based on the changes in the consciousness of the learner, with a strong cognitive focus and a mental construction of experience, reflective discourse is a necessary attribute to change the frame of reference that defines adults' world, so desired in financial literacy (Merriam, 1987; Mezirow, 1997).

Critical reflection, the other attribute of this feature, is supported by different theories such as Transformative Learning, Experiential Learning, and Informal Learning. It is through critical reflection that visitors change their expectations, beliefs, feelings, attitudes, and judgments, leading to meaning (Brockett & Hiemstra, 1991). Considering that financial literacy is about making wise and sound financial decisions, critically reflecting about the exhibits and programs of the future Museum may be extremely helpful when delivering financial literacy because it may lead to change in life and behavior of its adult visitors.

The attributes awareness and change in life and behavior' must be discussed together. Both are grounded on the theory of Transformative Learning that assumes that changes in life perspectives leads to social changes when new experiences of individuals are assimilated (Cross, 1981; Merriam & Brockett, 1997). However, the researcher believes that stakeholders were bewildered when presenting perspectives about changing the lives of visitors in a single museum visit. Hypothesis is that change in life and behavior was intended as a Product of the

entire process of delivering financial literacy, not only from the Museum of Economics. From a practical perspective, it is quite rare that a single visit can transform the financial life of the visitor since it depends heavily on the context of the learner outside the Museum.

Change in life and behavior is deeper than awareness. Awareness is the first step that may lead to change, wakening up the visitor to learn more and more about the financial issues presented in the exhibits and programs of the Museum of Economics. It seems to be more feasible to deliver awareness than promoting life-change in a single visit to the Museum. The feasibility of changing the life and behavior of visitors is related to and depends on the integration of other learning design features. The integration of various learning design features together has the power to transform awareness into change in the financial lives and behaviors of adult visitors.

The third feature, 'Encourage Active Engagement with the Information Presented across Modalities', is supported by the principles of Contextual Model of Learning and Experiential Learning. The social context dimension of the Contextual Model of Learning states that interactions among people are important for learning, which is achieved through interactive attributes of learning designs (Falk & Dierking, 2000; Falk & Storksdieck, 2005a). In addition, according to stakeholders, active engagement in the future Museum should be achieved by employing interactive modalities into its exhibits and programs. If everybody responds to all learning styles at some extent, with emphasis according to the situation (Kolb, 1984; Kolb et al, 2000; Kolb & Yeganeh, 2012; McLeod, 2017), then if all learning styles are employed, active engagement is more likely to be achieved.

A few stakeholders have manifested the preference for having integrated in the Museum of Economics traditional learning designs which present information in a less

interactive way, in accordance with what Kolb (1984) called the Diverging (feeling and watching) and Assimilating (watching and thinking) learning styles.

Another attribute of this feature is pleasure, fun, and entertainment. The contest of Pleasure versus Learning seems to be defeated, especially in museums (Ansbacher, 1998; Falk & Dierking, 2000; Falk et al., 1998). In our new world, competitors of museums are other entertainment enterprises like movie theaters and shopping centers, so ignoring the entertainment component of a museum means limiting the scope of its audience (Komarac, et al., 2020). Stakeholders seem to agree that pleasure, fun, and entertainment are important attributes for encouraging active engagement with the information presented across modalities. However, regarding financial issues, it is necessary to remember that some situations may not be fun, especially those related to the tension and problems that the lack of financial literacy may bring to people's lives.

As well as the feature 'Encourage Active Engagement with the Information Presented across Modalities', the feature 'Design Experiences that Build on Previous and Succeeding Learning' is also supported primarily by the literature on Experiential Learning and Contextual Model of Learning. Activities pre, during, and post visit, have the power to build upon experience and succeeding learning because they give the opportunity to visitors to have different experiences, covering different styles, different levels of knowledge, in different moments in time (Kim et al., 2016; Kolb, 1981; Kolb et al, 2000). In addition, complementary ways to build on previous and succeeding learning may help promoting social interactions and the opportunity to visitors learn not only from each other during the visit, but also within the community (Falk & Dierking, 2000; Falk & Storksdieck, 2005a; Maxwell & Evans, 2015; Rennie & Johnston, 2004).

This feature encompasses the attribute of temporary exhibits. The implementation of temporary exhibits is congruent with idea of accumulation of experience as a key aspect of the learning process of adults as proposed by Experiential Learning and the Contextual Model of Learning (Beard & Wilson, 2013; Falk & Storksdieck, 2005b; Jarvis, 2010; Merriam & Brockett, 1997). When adult visitors participate in different exhibits and programs, they have more opportunities to build on experience, and consequently learn more, in a cumulative process (Falk & Storksdieck, 2005b). In addition, temporary exhibits and programs are also consistent with Informal Learning when they give the opportunity for adult visitors to compare learning situations in the temporary exhibits with their prior experience and decide to turn them into new opportunities for learning (Way, 2014; Marsick & Watkins, 2001).

According to results of the study, temporary exhibits are the reason why visitors return to the Museum after a first visit. In this sense, returning to the museum is related to the Adult Learning assumptions that put experience in the center of the learning process, as learning being built upon experiences (Knowles, 1981). It is also related to the dimension time of the Contextual Model of Learning (Falk & Storksdieck, 2005b). As more the visitor returns to the future Museum of Economics, more she/he will have the opportunity to add a further layer of experience and learn from it (Falk & Storksdieck, 2005b).

It is from the Andragogical assumptions that the fifth feature, ‘Allow Flexibility for Selecting a Particular Path to Acquire Information’, receives its greater support from literature. SDL is a central assumption of Andragogy (Brookfield, 1986; Knowles, 1981), but it may vary in the level of assistance, visitors being more or less self-directed according to the situation (Brockett & Hiemstra, 1991; Brookfield, 1986). The Museum of Economics of Brazil, which is likely to have a strong cognitive content, seems to be one of these situations where self-directedness of adult visitors should vary.

Clear guidance and orientation and chronology and teachable moment, attributes of this feature, are also grounded in the physical context dimension of the Contextual Model of Learning and Informal Learning. These attributes are directly related to the individuals' rhythm of learning (Dudzinska-Przesmirtz & Grenier, 2008; Falk & Dierking, 2000). While implementation of chronology seems to be easier (chronology per se has an order to be followed), teachable moment is more complex, since it depends solely on the perspective of the visitor (consequence of individuals' differences). Knowles (1981) and Cross (1981) called the teachable moment as readiness to learn, and it is very difficult to include it in museums with broad scopes of audiences.

According to study's results, this feature has another important attribute, peculiar and relevant to the concrete context of the case study: the integration of the numismatic and art collections of the Museum. The flexibility for selecting a particular path to acquire information in the context of the Museum of Economics should consider that it has two different collections that currently are displayed in two learning paths apart. Results of the study showed that stakeholders are less concerned with the art collection than with the numismatic one. However, it was not impossible to infer if stakeholders do not desire them to be integrated or if simply if this attribute was not part of their thoughts.

Regarding 'Facilitate Memory by Connecting Information with Personal Experience', the sixth learning design feature, it is supported by Andragogy and Informal Learning, which have assumptions that state that any experience, cognitive or affective, interfere in the learning process (Dufresne-Tassé, 1992; Hohenstein & Moussouri, 2017; Merriam et al., 2007). Adult Learning principles do not make distinctions about positive or negative memory, although stakeholders had perspectives only about positive personal experiences. However, contexts involving financial issues not rarely raise negative feelings like anxiety, fear, shame, and

frustration. Even if these feelings were not part of stakeholders' perspectives, the facilitation of memory from negative personal experiences should also be considered in the exhibits and programs of the future Museum.

In stakeholders' perspectives, memories are connected to the personal experiences of visitors through the content presented in the museum's exhibits and programs. Content is a resource, a raw material of the exhibits and programs of the future Museum, and according to the OEM, Inputs should be the primary responsibility and concern of professionals/technicians and middle managers. However, the stakeholders assessed were top executive senior managers and professionals, whose responsibilities should be primarily to focus on Outcomes and Outputs (Kaufman, 1981; 1983). The concentration of stakeholder's perspectives in Inputs rather than Outputs and Outcomes may reveal some bias of internal stakeholders into cognitive approaches for the learning design features, or even a misalignment among the learning initiatives and the organizational efforts. The hypothesis for the strong focus on content is the highly technical educational background of stakeholders, whom may be biased toward more cognitive approaches.

The last learning design feature, 'Arrange the Environment in a Way that it Enhances Learning', is supported by Experiential Learning and it is directly related to the physical context of the Contextual Model of Learning. Physical environment is frequently related to perceptions of attractiveness of a museum, but it the most basic and neglected feature when promoting adult learning (Burlison, & Thoron, n.d.; Vosko & Hiemstra, 1988). While motivation, making meaning, and memory are claimed to be responsible for 75% of the learning process of adults, the physical environment is claimed to be responsible for 25%, an extent that lower but cannot be ignored (Vosko & Hiemstra, 1988). According to Experiential

Learning, the arrangement of the physical environment is responsible for engaging and involving the learner (Kolb & Kolb, 2010; Madsen & Jensen, 2021).

If adult visitors feel they are in a safe, comfortable, and pleasant environment, they will be more willing to have a learning experience in the museum (Falk & Dierking, 2000; Falk & Storksdieck, 2005a; 2005b). The less obvious special factors can adversely impact adult learning (Vosko & Hiemstra, 1988). Arrangements of the environment are related to several psychological processes like cognitive fatigue, distraction, motivation, emotional affect, and anxiety (Maxwell & Evans, 2015).

Besides the learning design features themselves, regarding the Outputs of the future Museum, crucial for alignment between the learning initiatives and the organizational efforts, stakeholders reinforced that its main Output should be indeed financial literacy. This perspective was probably forged on benchmarks from other museums like the MIDE and the Citéco. Satisfaction, also considered an Output by some stakeholders, is more of a consequence of the implementation of other attributes and features than an Output per se. Influence of others and learning in general had insignificant results to be able to include them among the desired Outputs of the future Museum.

At last, regarding Outcomes, also crucial aligning learning initiatives and the organizational efforts, the researcher does not have further discussions to present. The Outcome of contributing to the economic well-being of society is given by law, by the BCB's strategic planning, and it is aligned to the literature and best practices among other central banks all around the world. It was not contested nor reviewed, as presented in Chapter 1, in the section Limitations.

Implications

Meanwhile the discussions focus on the theory behind the results presented, the implications focus on the practical aspects that the learning design features will face to be integrated in the future Museum. In this sense, the third research question, which compared the ‘What Is’ and the ‘What Should Be’ status, gave a clear picture of the size of the discrepancies and how big are going to be the efforts to implement a museum that promotes learning among adult visitors. Results showed that it is not a matter of adding or adjusting some features – stakeholders believe that, to promote learning among adult visitors, it will be necessary to have a whole different museum.

If the Museum is completely different, one implication is the potential loss of the numismatic collection. The numismatic collection is the cornerstone of the current Museu de Valores’ exhibits and programs. However, if the Museum changes completely, there is a considerable chance that Brazil gains a museum of economics and loses a numismatic museum. The complete change of the exhibits of the current Museum generates doubts about what is going to happen to the heritage that it preserves.

Implications are not related only to the change process of the Museum as a whole, but they are also embedded in the integration of each of the identified learning design feature. For example, the first learning design feature presented in the list, ‘Consider that Individuals’ Differences May Impact Learning’, will demand, as a starting point, that the Museum invests in gathering information about its audience.

Benefits of investing in having information about visitors’ characteristics include having reliable subsidies to plan, review, and develop exhibits and programs of the future Museum. The current Museu de Valores has limited information about young visitors and

virtually no information about its adult visitors. The consequence is that the Museu de Valores is not able to consider the individuals' differences since they are unknown. However, if planned ahead, the future Museum of Economics may collect information about its visitors once they are inside the Museum. Alternatively, it may be provided with the help of external partners or third parties' agencies.

The tricky side of this feature is that, by considering the individual differences common to certain groups, other individuals that do not share these characteristics may be suppressed by the Museum. For example, if the design employed considers mainly the characteristics of children visitors, learning among adult visitors, if existent, may be collateral. Targeting different audiences, with different characteristics, is completely respectable. Reaching every single Brazilian citizen and deliver financial literacy to all visitors regardless of their differences is certainly the desire of the stakeholders of the future Museum of Economics. However, if the Museum of Economics targets more than one audience, it should incorporate different learning designs. On the other hand, incorporating a single one-size-fits-all learning design could end up limiting the scope of visitors of the future Museum of Economics of Brazil.

Considering these premises, implications for practice for integrating the feature 'Consider that Individuals' Differences May Impact Learning' are huge. Implementing learning designs that consider individuals' differences that may impact learning demands specialized knowledge about Adult Learning and Learning in Museums, efforts to develop customized communication strategies, and availability of money resources to adapt exhibits and programs.

Investing in design real-life problem-solving contexts is part of the implication of integrating this feature. Without real-life problem-solving contexts, the future Museum is

risked becoming an abstract and theoretical museum. Implementing real-life problem-solving contexts in museums is challenging. At first, real-life of whom? Who is the target audience? Different individuals face different financial problems, so it is necessary to delimit the target audience before designing learning features that presents real-life problem-solving contexts.

The employment of adequate language, another attribute of the feature ‘Consider that Individuals’ Differences May Impact Learning’, is directly linked to the delivery of real-life problem-solving contexts. If people cannot even understand the information and messages presented in the exhibits and programs, the efforts to deliver financial literacy will be ineffective. It is challenging to employ language that is simple, emphatic, and accessible to individuals with different characteristics, but it is a ‘must have’ in exhibits and programs that aim to deliver financial literacy to adults. Implications may include the need of employing different languages to deliver the same messages, in accordance with individuals’ differences.

Among all individuals’ differences that may impact learning, being in different geographical locations seems to have the most simplistic solution: the museum goes to where people are (either through virtual or itinerary exhibits) or people go to where the Museum is. Alternatives depend on the availability of resources or on the ability of the future Museum to find partners to implement such strategies. There are other individuals’ differences, though, that seem to be more complex to solve, impacting different attributes of exhibits and programs, like diversity in educational backgrounds.

Visitors with a higher education level may demand deeper cognitive content in exhibits and programs, what may end up excluding visitors with lower educational backgrounds. Museums already have a negative image of being elitist, paternalist, and ostracizing layers of society (Bell & Clover, 2017; Chang, 2006; Falk, 1999; Kim et al., 2016). If the feature ‘Consider that Individuals’ Differences May Impact Learning’ is not embraced by the future

Museum, it may end up worsening the image of elitism and paternalism so typical of museums. In addition, in the context of a diverse country such as Brazil, social interactions generally happen within individuals who share similar characteristics. If the future Museum targets a specific group of individuals with certain characteristics and others feel excluded, it may inhibit social interactions and cultural accessibility in the future Museum

The feature ‘Encourage Active Engagement with the Information Presented across Modalities’ also raises some implications for practice. Employing interactive attributes is a challenge in a museum with strong a cognitive content such as financial issues. Visual, audio, and games are common forms of encouraging active engagement and they are most frequently found in interactive museums. However, other multisensorial attributes like hands-on, smell, and taste, may be an even bigger challenge to implement. Challenging but not impossible.

Although implementing multisensorial features may become a financial burden to public museums (Komarac, et al., 2020), as a practitioner, the perception of the researcher is that there are alternatives to implement those attributes, with different costs, approaches, and technologies. The Economy Museum of FED St. Louis, for example, had one exhibit where visitors were invited to use their smell, it was the museum with the deepest cognitive content among those observed, and it is a public museum. Practical implications of encouraging active engagement across modalities is that the Museum of Economics will need to integrate multiple approaches to comply with all learning styles, despite the desired focus on specific ones.

As a practitioner, the researcher believes that designing experiences that build on previous and succeeding learning, the challenge embedded in the fourth learning design feature presented, will demand a great amount of money and human resources. People hardly come back to the museum to see the same thing, unless it offered an extraordinary experience at the

first visit. Implications also include potentializing the insertion of the Museum within the community, which is limited today.

Integrating or segregating the collections, aspects of the fifth feature, ‘Allow Flexibility for Selecting a Particular Path to Acquire Information’, has practical implications not only to develop the exhibits and programs, but also to maintain the art collection itself. If the Museum keeps the art collection, it will require specialized insurance and technical resources for conserving the art pieces, among other requirements. Specifications for maintaining the art collection may eventually inhibit the integration of both collections but it must be at least considered.

For the researcher, the integration of both collections into the same learning paths has the potential to be a competitive advantage of the Museum of Economics of Brazil over other similar museums all over the world. By presenting Brazilian art pieces to tell the story that the Museum wants to tell, the Museum of Economics may become a reference of innovation and attractiveness. This integration will require that financial educators, HRD professionals, and museum experts work together when designing the exhibits and programs of the future Museum.

The feature ‘Facilitate Memory by Connecting Information with Personal Experience’, according to stakeholders, is deeply related to the content to be included in its exhibits and programs. Despite content is not a learning design feature per se, it is a specific attribute of the concrete case, therefore should be considered by the planners of the future Museum. It was clearly the main concern of stakeholders and most desired attribute of the learning design features, identified in all sources of data, what strengthens its relevance for this case study.

According to results, all content of the future Museum of Economics should have futuristic and multidisciplinary approaches, amplifying the potential to facilitate memory by

connecting information with personal perspectives. Stakeholders desire that Past, Present, and Future are part of the context exhibited. Nevertheless, the futuristic approach was in the top of mind of stakeholders. History, history of money, history of Real, and gold, contents that are already part of the current Museu de Valores, are expected to continue to be part of the Museum of Economics. However, from the researcher's perspective, they must be re-evaluated and adjusted to fit the desired futuristic approach.

According to stakeholders, the Museum of Economics also should expand its content. The must have content that should be integrated into the Museum of Economics is Economics as science, inflation in the world, and inflation in Brazil. Not only they had the greatest number of references from perspectives of stakeholders, but also, they are deeply related to the societal mission of the BCB, with the greatest potential to connect information presented with personal experiences of visitors. Inflation is part of the history of Brazil and the greatest fear of economists, being directly related to emotions and feelings of millions of Brazilian citizens and families who experienced that period.

A second group of content can be classified as important to have, but with lower priority, because they were not in the top of mind of stakeholders: monetary policy, financial stability, banking industry, and sustainability. Among them, monetary policy, financial stability, and banking industry are directly related to the societal mission of the BCB. Despite they do not present novelty or great appeal among audiences, they are important to be included in exhibits and programs of the future Museum to be able to deliver understanding about the role of central banks and to help the BCB to accomplish its societal mission.

Understanding the role of central banks, the role of saving and making a budget, and the responsible use of credit, were undoubtedly in the top of mind of stakeholders' concerns and directly related to societal mission of the BCB. However, understanding the role of the

government in the financial and economic scenario was not so popular among stakeholders neither it is directly related to the organizational purpose of the BCB. At the end, to promote understanding about the role of government in the Museum of Economics of Brazil is more of a political than a technical decision.

The decision about including the content sustainability also has a political component but in a different sense. It has a worldwide appeal, it has been included in the BCB's strategic agenda, and there is a growing worldwide movement to strength the economic and financial aspects of sustainability. It is true that there was a dissonant perspective about including or not the content sustainability in the future Museum of Economics but considering that it is directly related to scarcity of resources and part of the strategic agenda of the BCB, not including the content in the future Museum would be strategically dissonant.

A third group of content can be classified as desirable but less relevant because they are not directly aligned to the societal mission of the BCB. If compared to other content, fewer stakeholders have manifested the desired to include these contents in the Museum of Economics. In addition, these contents have other agencies and organizations that are directly responsible for them, so including them in permanent exhibits and programs of the future Museum of Economics could bring political friction among governmental agencies. They are insurance, retirement, trade, taxes, and statistics.

The focus of stakeholders on content may reveal a potential bias. The primary implication of the potential bias stakeholders, especially internal stakeholders, is that their perspectives may not reflect adults' learning needs in general. Internal stakeholders were highly educated professionals, most of them with strong economic backgrounds, different from the general population. If compared, external stakeholders had perspectives that were less cognitive, less technical, and more related to the daily lives of adult visitors. In this case,

technicality of internal stakeholders may be tainting the perspectives about the content needed for the future Museum of Economics.

The potential bias of stakeholders became more evident considering the representativeness of the documents sampled. It is necessary to acknowledge that this was an unintentional limitation during data analysis. Although the number of interviews were equally balanced between internal and external stakeholders, documents with records and meetings had more perspectives of internal stakeholders than external. This unbalance ended up reinforcing the focus of internal stakeholders in cognitive aspects. If the representativeness of documents was more equally balanced between internal and external stakeholders, maybe the potential bias would have less significance in the results.

The implications for the integration of the last feature, ‘Arrange the Environment in a Way that it Enhances Learning’, must be analyzed under the context of an environment which main purpose is to host a central bank. This means that the facilities of the Museum of Economics of Brazil will serve other purposes than hosting the Museum, what may bring constraints in implementing all the desired features. These constraints are primarily related to architecture and security, which ends up to limiting the ample access of visitors into the building.

Results from observation in the Economy Museum of FED St. Louis show that constraints in buildings that host central banks are not exclusivity of the BCB. While the MIDE and the Citéco have buildings exclusive to host their museums, apart from the central banks that sponsor them, the learning environment of the Economy Museum of FED St. Louis presented similar limitations to the BCB’s. Implications are that maybe not all desired attributes of this feature will be able to be implemented, regardless of being part of stakeholders’ perspectives.

A common implication of the integration of all features, object of stakeholder's concerns, are the resources to integrate and maintain the features – or, in this case, the lack of them. Concerns about resources were part of stakeholders' perspectives or emerged from the concrete case study, but they were not grounded on the literature reviewed in Chapter 2. Despite money resources, human resources, and the value Quality have not been included in the prioritized list of learning design features, they are important raw materials which must be processed to deliver the desired learning results (Kaufman, 2006), and for this reason they are herein presented.

Money resources are the most important Input considering the implementation of a long-lasting Museum. Probably it presents the most severe practical implications for the Museum of Economics and its capacity to implement learning design features for adults. Stakeholders have outspoken to have great concerns about the money resources necessary to maintain, update, and develop further exhibits and programs in the Museum of Economics. What they did not mention is that the current Museum is free for all visitors, and it will continue to be, worsening the shortage of money resources available. Money resources are necessary to hire people, to acquire or develop the necessary skills, and train the museum staff.

Human resources for the Museum will require specialized skills and specific training that are not common to central banks. From the practical perspective, providing adequate human resources to the Museum of Economics, as desired by stakeholders, present a challenge that should count on alternative solutions. The BCB cannot hire professionals from the market (only through public civil examinations, which depend on federal approval to happen), what is a constraint. For example, to acquire the necessary skills and training, the future Museum might develop on-the-job training with partners and other museums; establish study groups; or purchase one-line training sections from experts in the field.

The value Quality is another Input identified in the study which was not integrated into the list of the learning design features. Despite stakeholders did not explain what they meant by this value, it is possible to infer. The value Excellence, close related to Quality, is an official corporate value from the BCB, embedded in the organizational culture and officially stated in the BCB's Strategic Planning (Banco Central do Brasil, 2021). In this sense, besides the stakeholders' concerns with deterioration and obsolescence of the Museum, the integration of the value Quality that arose from results is associated to the expectation that the Museum of Economics of Brazil implements high standards for everything it delivers.

Practical implications for lacking resources are severe because, without adequate resources, the future Museum is doomed to fail in the long period. According to the experience of the researcher, the major reason for obsolescence and unattractiveness of the current Museu de Valores was the lack of resources along the years. If it is going to be implemented a totally different museum that does not have the resources to maintain its operations, it will be doomed to the same failure. The possibility of finding partnerships and other sources for external funding have been mentioned by stakeholders and should be indeed considered by the planners of the Museum of Economics. In addition, if the future Museum is open to new ways of managing its human resources - like having a volunteer program or developing programs with community centers - it may be possible to improve management of its staff with fewer money resources.

Although some practical implications in integrating the identified learning design features were herein presented, they are not terminal. Implications will continue to appear and change along the development and implementation of the exhibits and programs of the future Museum of Economics. It is a road to take, with many decisions to make along the path. What the researcher will do to contribute to this process is to present the list of the learning design

features for adults for the planners of the Museum of Economics and discuss each of them, so they can make decisions supported by consistent subsidies.

The presentation of the study will happen in a workshop with the museum planners of the future Museum. The researcher will present the methodology of the needs assessment conducted and the results of the study, with emphasis on the learning design features. In addition, the study will also be handed to the BCB, allowing future consultation at any time by stakeholders, museum planners, and the public in general.

Recommendations

The study aimed to subsidize the planners of the Museum of Economics instead of being a 'to do' list. The theoretical discussions about the learning design features will be handed to the planners of the future Museum as well as the identified practical implications, so they can use them in the decision process about the exhibits and programs of the future Museum. In addition to these discussions and implications, the researcher has final recommendations and suggestions for future action that took into consideration her personal perspective and experience.

The first recommendation is regarding Content. Stakeholders desire a long list of content to be integrated in the future Museum of Economics of Brazil, and it might be reviewed. In the perspective of a practitioner, there is no need to include all the content desired by stakeholders, or at least not all in the permanent exhibits and programs. If it does, the Museum will privilege cognitive attributes instead of learning design features for adults. In other words, the Museum is risked to becoming a long and boring museum that do not attract adult visitors nor promotes learning among them.

In addition, the futuristic approach that stakeholders desire to integrate in the content of the Museum of Economics seems to be very interesting, but difficult to maintain updated. A strong futuristic approach will require constant change and adjustments of exhibits and programs, consequently demanding more money and human resources. If Future is going to be included in the Museum – and the researcher believe it should in some extent – it could be incorporated in temporary exhibits or through partnerships, diminishing the opportunities for presenting obsolete exhibits.

Secondly, it is necessary to clearly define who is going to be the target audience of the Museum of Economics of Brazil. Most of the learning design features herein presented are impacted by the definition of the target audience. It is important to have in mind that is impossible to deliver financial literacy for the entire population through the Museum. The MIDE, for example, has targeted its audience to visitors from 15 to 25 years old. They know that learning outside this range will be collateral, and they have accepted it. On the other hand, the Citéco did not define any specific audience, but it is not recognized nor praised as the MIDE. Implementation and success of the learning design features depends on this definition, which is crucial to guarantee that all organizational efforts are headed in the same way (Kaufman & Guerra-López, 2013).

The third recommendation is to focus on the promotion of awareness on financial issues instead of changing life and behavior of visitors. Both awareness and change in life and behavior were part of the stakeholders' perspectives, but from a practical perspective, if visitors wake up for financial issues, the Museum of Economics will be already adding important value to society. Including the attributes of pleasure, fun, and entertainment may help demystifying financial issues, but one single visit will hardly turn visitors into financially literate citizens. Financial literacy is a lifelong learning process, and the Museum of

Economics of Brazil can give a good contribution by delivering awareness, letting change in life and behavior for a second moment, when the visitor is conscious about the need of changing and presents readiness to learn.

The fourth recommendation is to start thinking and planning beyond the implementation project as soon as possible. The success of the Museum of Economics of Brazil will be achieved in the long term, not when it opens. Adult learning is a long-term enterprise, and if the Museum of Economics is not able to adjust under adverse circumstances, it will hardly achieve its potential to promote learning among visitors.

The following recommendation is based solely on the personal perspective of the researcher, supported by the perspective of one single stakeholders: the name of the future Museum of Economics might be reviewed. The researcher believes that there is no need to change the name of Museu de Valores [Museum of Values], which means more than a museum of economics. If the current name is going to be changed anyway, another name might be found. People are afraid of the word 'Economics'. Adult leaning in the Museum should be related to sense of belonging, proximity, real-life, closeness. The name Museum of Economics is technically correct, but it resembles many other things, but not these ones. The word 'Economics' may expel museum visitors instead of attracting them, and this is the last thing the stakeholders would desire for the Museum of Economics of Brazil.

For future action, the researcher has two last recommendations related to the institutionalization of the change process proposed in the. Despite concerns with the resources necessary to maintain and update the Museum have been identified in stakeholders' perspectives, it is also necessary to have processes to gather information and to persevere the efforts employed to change, allowing continuously improvement. The researcher believes that,

considering the context presented, there are two feasible ways to do it: 1) by implementing evaluations, and 2) by implementing HRD interventions.

Implementing evaluations is a crucial step to gather information from the organization, clients, and stakeholders about the status of the changes and learning design features implemented. Once integrated, it will be necessary to know if the learning design features indeed promote adult learning and in what extent. The ideal is that evaluations are implemented in a continuous and frequent manner, allowing monitoring and measurement of the intended results of the change. In addition, the implementation of evaluations may also open space to further studies regarding the museums of economics, financial literacy for adults, financial literacy in museums, and adult learning in museums.

Besides having structured feedback through evaluations, implementing HRD interventions are necessary to institutionalize the change proposed. If the change is not institutionalized, all efforts and resources to implement the change may be in vain or lost over the years. The efforts and resources to implement the future Museum are being enormous, and not implementing processes that allow these efforts to endure may leave the achievement of the societal mission of the future Museum condemned from its implementation.

As explored in the literature review, the HRD perspective enhances the alignment of the learning initiatives and the organizational efforts, what seems to be most needed when having a societal mission like the Museum has. In this sense, HRD interventions aim to promote commitment to the changes, incentives to achieve accomplishments, and diffusion of organizational strategies (Jacobs & Osman-Gani, 2004). They include, but are not limited to, training interventions, communication strategies, staff members' involvement in decision making processes, and knowledge sharing (Jacobs & Osman-Gani, 2004; Jacobs, Russ-Eft & Zidan, 2001). HRD interventions are powerful tools to ensure that change has been accepted

overtime and that organizational efforts are headed in the same direction, contributing to the long-lasting success of the Museum of Economics of Brazil.

REFERENCES

- AAMV. Associação dos Amigos do Museu de Valores (1988). *Museu do Banco Central do Brasil*. Rio de Janeiro, Brazil: Safra.
- AAMV. Associação dos Amigos do Museu de Valores (2021). Retrieved from:
<https://amigosdomuseudevalores.com/o-museu-de-valores>
- Aljafari, R. (2019). Self-directed learning strategies in adult educational contexts: Helping students to perceive themselves as having the skills for successful learning. In: Giuseffi, F.G. (Ed.), *Self-Directed Learning Strategies in Adult Educational Contexts* (pp.124-137). Hershey, PA: IGI Global. doi: 10.4018/978-1-5225-8018-8.ch007
- Altschuld, J.W. (2004). Emerging dimensions of Needs Assessment. *Performance Improvement*, 43(1), 10-15. <https://doi.org/10.1002/pfi.4140430104>
- Altschuld, J.W., & Watkins, R. (2014). A primer on Needs Assessment: More than 40 years of Research and Practice. *New Direction for Evaluation*, 144, 5-18. <https://doi.org/10.1002/ev.20099>
- Amari, M., & Jarboui, A. (2015). Financial Literacy and Economics Education among young adults: An observation from Tunisia. *Journal of Business & Finance Librarianship*, 20, 209-219. doi: 10.1080/08963568.2015.978834
- Anderson, V. (2009). Desperately seeking alignment: Reflections of senior line managers and HRD executives. *Human Resource Development International*, 12(3), 263-277. <https://doi.org/10.1080/13678860902982009>
- Ansbacher, T. (1998). John Dewey's experience and Education: Lessons for museums. *Curator*, 41(1), 36- 49. <https://doi.org/10.1111/j.2151-6952.1998.tb00812.x>

- Apostoaie, M.C. (2010). Central banks' involvement in encouraging Economic Education and Literacy. In: *Annals of "Dunarea de Jos" University of Galati. Economics and Applied Informatics*, 2, 147-154. Retrieved from: https://www.researchgate.net/publication/49611001_Central_Banks'_Involvement_in_Encouraging_Economic_Education_and_Literacy
- Araújo, F.A.L., & Pimenta de Souza, M. (2012). Educação Financeira para um Brasil sustentável: Evidências da necessidade de atuação do Banco Central do Brasil em Educação Financeira para o cumprimento de sua missão [Financial Education for a sustainable Brazil: Evidence for the need of Banco Central do Brasil action on Financial Education to fulfill its mission]. *Trabalho para Discussão*, No. 280. Banco Central do Brasil. Retrieved from: <https://www.bcb.gov.br/pec/wps/port/TD280.pdf>
- Armstrong, J. (2010). Naturalistic Inquiry. In: Salkind, N.J. (Ed.), *Encyclopedia of Research Design* (pp. 880-885). Thousand Oaks, CA: Sage. Retrieved from: https://www.researchgate.net/publication/256294652_Naturalistic_Inquiry
- Atkinson, A. (2008). Evidence of impact: An overview of Financial Education evaluations. *Consumer Research*, No. 68. Financial Services Authority. Retrieved from: <http://www.bristol.ac.uk/geography/research/pfrc/themes/fincap/evidence-of-impact.html>
- Atkinson, A., & F. Messy (2012). Measuring Financial Literacy: Results of the OECD / International Network on Financial Education (INFE) Pilot Study. *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 15. Paris, France: OECD Publishing. Retrieved from: <https://doi.org/10.1787/5k9csfs90fr4-en>

- Barker Steege, L.M., Marra, R.M., & Jones, K. (2012). Meeting Needs Assessment challenges: Applying the Performance Pyramid in the U.S. Army. *Performance Improvement*, 51(10), 32-41. doi:10.1002/pfi.21313
- Banco Central do Brasil (2018). Plano Museológico do Museu de Valores do Banco Central [Museology Plan of the Brazilian Money Museum] (Issue Brief No. 1). Brasília, Brazil.
- Banco Central do Brasil (2019). Projeto Primeiro Museu de Economia da América do Sul apresentado ao Fundo de Direitos Difusos [Project of the First Museum of Economics of South America presented to the Fund for the Defense of Collective Rights] (Issue Brief No. 2). Brasília, Brazil.
- Banco Central do Brasil (2021). Retrieved from: <https://www.bcb.gov.br/acessoinformacao/bchashtag>
- Banz, R. (2008). Self-Directed Learning: Implications for museums. *The Journal of Museum Education*, 33(1), 43-54. Retrieved from <http://www.jstor.org/stable/40479604>
- Baumgartner, L.M. (2003a). Adult Learning Theory: The basics. In: Baumgartner, L.M., Lee, M., Birden, S. & Flowers, D. (Eds.), *Adult Learning Theory: A primer* (pp. 7-10). Center on Education and Training for Employment. Columbus, OH. Information Series, No. 392. Retrieved from: <https://files.eric.ed.gov/fulltext/ED482337.pdf>
- Baumgartner, L.M. (2003b). Andragogy: A foundational theory/set of assumptions. In: Baumgartner, L.M., Lee, M., Birden, S., & Flowers, D. (Eds.), *Adult Learning Theory: A primer* (pp. 11-16). Center on Education and Training for Employment. Information Series, No. 392. Retrieved from: <https://files.eric.ed.gov/fulltext/ED482337.pdf>
- Baumgartner, L.M. (2003c). Transformative Learning: Fundamental concepts. In: Baumgartner, L.M., Lee, M., Birden, S., & Flowers, D. (Eds.), *Adult Learning Theory: A*

- primer* (pp. 22-27). Center on Education and Training for Employment. Information Series, No. 392. Retrieved from: <https://files.eric.ed.gov/fulltext/ED482337.pdf>
- Beard, C. (2018). Dewey in the world of Experiential Learning. *New Directions for Adult and Continuing Education*, 158, 27-37. doi: 10.1002/ace.20276
- Beard, C., & Wilson, J.P. (2013). *Experiential Learning: A handbook for Education, Training and Coaching* (3rd ed.). London, England: Kogan Page.
- Beder, H. (1989). Purposes and philosophies of Adult Education. In: Merriam, S.B. & Cunningham, P.M. (Eds.), *Handbook of Adult and Continuing Education* (pp.37-50). San Francisco, CA: Jossey-Bass.
- Bélangier, P. (2011). Introduction to Adult Learning Theories. In: Bélangier, P. (Ed.), *Theories in Adult Learning and Education* (pp. 13-16). Farmington Hills, MI: Barbara Budrich. doi:10.2307/j.ctvbkjx77.5
- Bell, L., & Clover, D.E. (2017). Critical culture: Environmental Adult Education in public museums. *New Directions for Adult and Continuing Education*, 153, 17-30. <https://doi.org/10.1002/ace.20218>
- Belzer, A.A., Bierema, L.L., Cseh, M., Ellinger, A.D., Ruona, W.E., & Watkins, K.E. (2001). *HRD on the margins: Exploring resistance to HRD in Adult Education*. Paper presented at the Adult Education Research Conference, East Lansing, MI. Retrieved from: <https://newprairiepress.org/cgi/viewcontent.cgi?article=2285&context=aerc>
- Berger, R. (2015). Now I see it, now I don't: Researcher's position and reflexivity in Qualitative Research. *Qualitative Research*, 15(2), 219-234. <https://doi.org/10.1177/1468794112468475>
- Bennett, S. J., & Koper, R. (2008). *Learning design: Concepts*. University of Wollongong Research Online. Retrieved from: <https://ro.uow.edu.au/edupapers/691>

- Berlin, H.M. (2013). The best central banks and mint money museums for visitors. *The Future of Money Museums*, 2(2), 12-14. Mint World Compendium. Retrieved from: https://muenzenwoche.de/wp-content/uploads/2020/02/Mintworld_Compendium_4.pdf
- Bholat, D., Kowalski, J., & Milward, S. (2015, October 9). Financial Inclusion and central banks. *Bank Underground Blog*. Retrieved from: <http://dx.doi.org/10.2139/ssrn.2671740>
- Bingham, A. J., & Witkowsky, P. (2012). Deductive and inductive approaches to qualitative data analysis. In Vanover, C., Mihas, P., & Saldaña, J. (Eds.), *Analyzing and interpreting qualitative data: After the interview* (pp. 133-146). Newbury Park, CA: Sage. (Electronic version]. Retrieved from: <https://www.andreajbingham.com/resources-tips-and-tricks/deductive-and-inductive-approaches-to-qualitative-analysis>
- Boelens, R., De Wever, B., & McKenney, S. (2020). Conjecture mapping to support vocationally educated adult learners in open-ended tasks. *Journal of the Learning Sciences*, 29(3), 430-470. doi: 10.1080/10508406.2020.1759605
- Bowen, G.A. (2005). Preparing a Qualitative Research-based dissertation: Lessons learned. *The Qualitative Report*, 10(2), 208-222. doi: 10.46743/2160-3715/2005.1846
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40. <https://doi-org.proxy2.library.illinois.edu/10.3316/QRJ0902027>
- Brasil. (2010). *Decreto 7.397* [Decree 7.397]. Retrieved from: http://www.planalto.gov.br/ccivil_03/_Ato2007-2010/2010/Decreto/D7397.htm
- Brasil. (2020). *Decreto 10.393* [Decree 10.393]. Retrieved from: http://www.planalto.gov.br/ccivil_03/_ato2019-2022/2020/decreto/D10393.htm

- Brasil. (2021). Lei Complementar 179 [Complementary Law 179]. Retrieved from: <https://www.in.gov.br/en/web/dou/-/lei-complementar-n-179-de-24-de-fevereiro-de-2021-305277273>
- Brockett, R.G., & Hiemstra, R. (1991). *Self-direction in Adult Learning: Perspectives on theory, research, and practice*. New York, NY: Routledge.
- Brookfield, S.D. (1986). *Understanding and facilitating Adult Learning: A comprehensive analysis of principles and effective practices*. San Francisco, CA: Jossey-Bass.
- Brown, L. (2014, September 27). Economy the focus of new FED museum in downtown St. Louis. *St. Louis Post-Dispatch*. St. Louis, MO. Retrieved from: <http://eds.a.ebscohost.com.proxy2.library.illinois.edu/eds/detail/detail?vid=0&sid=077550a2-c095-4261-8515-06d2b920b1bf%40sessionmgr4007&bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=2W61557222437&db=nfh>
- Bruhn, M., Leão, L.S, Legovini, A., Marchetti, R., & Zia, B. (2013). Financial Literacy for high school students and their parents: Evidence from Brazil. *The World Bank Policy Research Working Paper*, No. 6723. Washington, DC: The World Bank. Retrieved from: <http://documents1.worldbank.org/curated/pt/753501468015879809/pdf/WPS6723.pdf>
- Bruner, J. S. (1961). The act of discovery. *Harvard Educational Review*, 31, 21–32. Retrieved from: <https://digitalauthorshipuri.files.wordpress.com/2015/01/the-act-of-discovery-bruner1.pdf>
- Burleson, S. E., & Thoron, A. C. (n.d.). *Maslow's Hierarchy of Needs and Its Relation to Learning and Achievement*. U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida. Retrieved from <http://knowen->

production.s3.amazonaws.com/uploads/attachment/file/2007/Maslow_E2_80_99s%2BHierarchy%2Bof%2BNeeds%2Band%2BIts%2BRelation%2Bto%2BLearning.pdf

Burner, K.J. (2010). From Performance Analysis to Training Needs Assessment. In: Silber, K.H. & Foshay, W.R. (Eds.), *Handbook of Improving Performance in the Workplace: Instructional Design and Training Delivery* (pp. 144-83). San Francisco, CA: Pfeiffer.

Calva Montiel, C. E. (2010). Interactividad y museos: La experiencia del Museo Interactivo de Economía (MIDE) en la ciudad de Mexico [Interactivity and museums: The experience of the Interactive Museum of Economy in Mexico City]. Paper presented at the *Congreso Euro Iberoamericano de Alfabetización Mediática y Culturas Digitales*, Sevilla, Spain. Retrieved from: https://idus.us.es/bitstream/handle/11441/57286/interactividad_y_museos_la_experiencia_del_museo_interactivo_de_economia_mide_en_la_ciudad_de_mexico.pdf?sequence=1&isAllowed=y

Carpena, F., Cole, S., Shapiro, J., & Zia, B. (2017). The ABCs of Financial Education: Experimental evidence on attitudes, behavior, and cognitive biases. *The World Bank Policy Research Working Paper*, No. 7413. Washington, DC: The World Bank. <https://doi.org/10.1287/mnsc.2017.2819>

Carvalho, I. (1996). Transformative Education: A potential role for Latin American museums. *Journal of Museum Education*, 21(2), 17-21. doi: 10.1080/10598650.1996.11510323

Chalofsky, N. (1992). A unifying definition for the Human Resource Development profession. *Human Resource Development Quarterly*, 3(2), 175-82. <https://doi.org/10.1002/hrdq.3920030208>

Chang, E. (2006). Interactive experiences and Contextual Learning in museums. *Studies in Art Education*, 47(2), 170-186. <https://doi.org/10.1080/00393541.2006.11650492>

- Christensen, B.D. (2018). From Needs Assessment to Needs Analysis. *Performance Improvement*, 57(7), 36-44. <https://doi.org/10.1002/pfi.21785>
- Chyung, S.Y. (2008). *Foundations of Instructional and Performance Technology*. Electronic book. Retrieved from: <http://www.hrdpress.com/Foundations-of-Instructional-and-Performance-Technology-FIPT>
- Citéco. *The City of Economics* (2021). Retrieved from: <https://www.citeco.fr/>
- Clardy, A. (2008). The strategic role of Human Resource Development in managing core competencies. *Human Resources Development International*, 11(2), 183-197. doi: 10.1080/13678860801932998
- Clover, D.E., Sanford, K., & Jayme, B.O. (2010). Adult Education and Lifelong Learning in arts and cultural institutions: A content analysis. *Journal of Adult and Continuing Education*, 16(2), 5-20. <https://doi.org/10.1177/147797141001600202>
- Conole, G. (20). *Designing for Learning in an Open World*. doi: 10.1007/978-1-4419-8517-0
- Creswell, J.W, & Creswell, J.D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods approaches* (5th ed.). Los Angeles, CA: Sage.
- Crewley, M. (2017, September 10). *Are You financially “adulting”?* The Motley Fool. Retrieved from: <https://www.fool.com/personal-finance/2017/09/10/are-you-financially-adulting.aspx>
- Cross, P.K. (1981). *Adult as learners: Increasing participation and facilitating learning*. San Francisco, CA: Jossey-Bass.
- Darbyshire, P. (1993). In defence of Pedagogy: A critique of the notion of Andragogy. *Nurse Education Today*, 13(5), 328-335. [https://doi.org/10.1016/0260-6917\(93\)90072-A](https://doi.org/10.1016/0260-6917(93)90072-A)

- Davenport, J., & Davenport, J. A. (1985). A chronology and analysis of the Andragogy debate. *Adult Education Quarterly*, 35(3), 152–159.
<https://doi.org/10.1177/0001848185035003004>
- Davidson, B., Heald, C.L., & Hein, G.E. (1994). Increased exhibit through multisensorial interaction. In: Hooper-Greenhill, E. (Ed.), *The Educational Role of the Museum* (pp. 179-194). New York, NY: Routledge.
- Davoli, M., & Rodríguez-Planas, N. (2020). Culture and Adult Financial Literacy: Evidence from the United States. *Economics of Education Review*, No. 78.
<https://doi.org/10.1016/j.econedurev.2020.102013>
- Devkota, P. (2019). *Front End Analysis Tool: Roger Kaufman's Organizational Elements Model*. Syracuse, NY: Syracuse University. Retrieved from:
https://pdevkota.expressions.syr.edu/wp-content/uploads/2019/07/FEA-tool-final_v2.pdf
- Dick, C.D., & Jaroszek, L. M. (2014). Think twice or be wise in consumer credit choices. *Social Science Research NetWork*. Retrieved from:
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2278835
- Dierking, L. (1991). Learning Theory and Learning Styles: An overview. *The Journal of Museum Education*, 16(1), 4-6. doi: 10.1080/10598650.1991.11510159
- Dierking, L. (2010). Being of value: Intentionally fostering and documenting public value. *The Journal of Museum Education*, 35(1), 9-19. doi: 10.1080/10598650.2010.11510646
- Dudzinska-Przesmizzki, D., & Grenier, R.S. (2008). Nonformal and Informal Adult Learning in museums. *Journal of Museum Education*, 33(1), 9-22.
<https://doi.org/10.1080/10598650.2008.11510583>

- Dufresne-Tassé, C. (1992). *Adult epistemic behavior at the museum: Implications for Museum Education*. Social Science and Humanities Research Council of Canada. Retrieved from: <https://files.eric.ed.gov/fulltext/ED344059.pdf>
- Dufresne-Tassé, C. (1995). Andragogy (Adult Education) in the museum: A critical analysis and new formulation. In: Hooper-Greenhill, E. (Ed.), *Museum, Media, Message* (pp. 245-259). London, England: Routledge.
- Dufresne-Tassé, C., & Lefebvre, A. (1994). The museum in Adult Education: A psychological study of visitor reactions. *International Review of Education*, 40(6), 469-484. Retrieved from: <https://www.jstor.org/stable/3444321>
- Eickmann, P., Kolb, A., & Kolb, D. A. (2004). Designing Learning. In: Boland, R. J., & Collopy F. (Eds.), *Managing as Designing* (pp. 241-247). Stanford, CA: Stanford University Press.
- Elias, J.L. (1979). Andragogy Revisited. *Adult Education Quarterly*, 29(4), 252-256. <https://doi.org/10.1177/074171367902900404>
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative Content Analysis: A focus on trustworthiness. *Sage Open*, 4(1). <https://doi.org/10.1177/2158244014522633>
- Evrard, Y., & Krebs, A. (2018). The authenticity of the museum experience in the digital age: The case of the Louvre. *Journal of Cultural Economics*, 42, 353–363. Retrieved from: <https://doi-org.proxy2.library.illinois.edu/10.1007/s10824-017-9309-x>
- Falk, J. H. (1999). Museums as institutions for personal learning. *Daedalus*, 128(3), 259-275. Retrieved from <http://www.jstor.org/stable/20027574>
- Falk, J. H. (2004). The director's cut: Toward an improved understanding of learning from museums. *Science Education*, 88(1), 83-96. <https://doi.org/10.1002/sce.20014>

- Falk, J. H. (2006). An identity-centered approach to understanding museum learning. *Curator: The Museum Journal*, 49(2), 151-166. doi: 10.1111/j.2151-6952.2006.tb00209.x.
- Falk, J. H. (2008). Viewing art museum visitors through the lens of identity. *Visual Arts Research*, 34(2), 25-34. Retrieved from <http://www.jstor.org/stable/20715472>
- Falk, J. H., & Dierking, L.D. (2000). *Learning from museums: Visitor experiences and the Making of Meaning*. Walnut Creek, CA: AltaMira.
- Falk, J. H., & Storksdieck, M. (2005a). Using the Contextual Model of Learning to understand visitor learning from a science center exhibition. *Science Education*, 89(5), 744-778. <https://doi.org/10.1002/sce.20078>
- Falk, J. H., & Storksdieck, M. (2005b). Learning Science from museums. *História Ciências Saúde-Manguinhos*, 12, 117-43. doi: 10.1590/S0104-59702005000400007
- FEBRABAN. Federação Brasileira de Bancos (2021). I-SFB/Febraban: Índice de Saúde Financeira do Brasileiro [I-SFB/Febraban: Index of Financial Health of Brazilians]. Retrieved from: https://pefmbddiag.blob.core.windows.net/cdn/downloads/Relatorio_Febraban_v1.pdf
- Federal Reserve Bank of St. Louis (2021). Retrieved from <https://www.stlouisfed.org/inside-the-economy-museum>.
- Fenwick, T. J. (2004). Toward a Critical HRD in theory and practice. *School Psychology International*, 54(3), 117–126. <https://doi.org/10.1177/0143034304036299>
- Ferguson, D. L., & Ferguson, P. M. (2000). Qualitative Research in Special Education: Notes toward an open inquiry instead of a new orthodoxy? *Journal of the Association for Persons with Severe Handicaps*, 25(3), 180–185. <https://doi.org/10.2511/rpsd.25.3.180>

- Fernandes, D., Lynch Jr., J. G. & Netemeyer, R. G. (2014). Financial Literacy, Financial Education and downstream Financial Behaviors. *Management Science*, 60(8), 1861–1883. doi: 10.1287/mnsc.2013.1849
- Ferreira, V. R. M. (2013). *Financial capability and interactivity in a money museum – Economic Psychology in the Brazilian Central Bank Money Museum*. Paper presented at the International Committee of Money and Banking Museums (ICOMON) E-Proceedings, Rio de Janeiro, Brazil. Retrieved from: http://icomon.mini.icom.museum/wp-content/uploads/sites/20/2018/12/Financial_capability_and_interactivity_in_a_money_museum.p
- Fluch, M. (2007). Selected central banks' Economic and Financial Literacy programs. *Monetary Policy and the Economy: Quarterly Review of Economic Policy*, 85-104. Retrieved from: http://www.oenb.at/en/img/mop_2007_3_tcm16-69085.pdf.
- Forté, K. (2014). Sociocultural issues in Adult Financial Education. *New Directions for Adult and Continuing Education*, 141, 5-13. <https://doi.org/10.1002/ace.20080>
- Galvin, E. R., & Eagleton, C. (2008). Summary of results: Survey of money and banking museums. *International Committee of Money and Banking Museums*. Retrieved from: http://icomon.mini.icom.museum/wp-content/uploads/sites/20/2018/12/ICOMON_survey_2008.pdf
- Garavan, T. N. (2007). A strategic perspective on Human Resource Development. *Advances in Developing Human Resources*, 9(1), 11-30. <https://doi.org/10.1177/1523422306294492>

- Garavan, T. N., & Carbery, R. (2012). *Strategic Human Development*. Retrieved from: https://www.researchgate.net/publication/242390323_02_strategic_human_resource_development
- Garavan, T. N., Costine, P., & Heraty, N. (1995). The emergence of Strategic Human Resource Development. *Journal of European Industrial Training*, 19, 4-10. Retrieved from: <https://www.emerald.com/insight/content/doi/10.1108/03090599510095816/full/html>
- Gill, P., Stewart, K. F., Treasure, E. T., & Chadwick, B. L. (2008). Methods of Data Collection in Qualitative Research: Interviews and Focus Groups. *British Dental Journal Official Journal of the British Dental Association*, 204(6), 291-5. doi: 10.1038/bdj.2008.192
- Gnan, E., Silgoner, M. A., & Weber, B. (2007). Economic and Financial Education: Concepts, goals and measurement. *Monetary Policy & the Economy*, 3(7), 28-49. Retrieved from: https://www.researchgate.net/publication/5206330_Economic_and_Financial_Education_Concepts_Goals_and_Measurement
- Goodyear, P. (2005). Educational design and networked learning: Patterns, pattern languages and design practice. *Australasian Journal of Educational Technology*, 21(1). <https://doi.org/10.14742/ajet.1344>
- Grek, S. (2009). In and against the museum: The contested spaces of Museum Education for adults. *Discourse: Studies in the Cultural Politics of Education*, 30(2), 195-211. doi: 10.1080/01596300902809237.
- Grenier, R. S. (2007). *How do museums fit into our notions of Adult Learning?* Paper presented at the Adult Learning Research Conference, Halifax, Canada. Retrieved from: <http://newprairiepress.org/aerc/2007/roundtables/7>
- Gonzales, C., Jain-Chandra, S., Kochhar, K., Newiak, M., & Zeinullayev, T. (2015). Catalyst for Change: Empowering women and tackling income inequality. *IMF Staff Discussion*

- Note.* Washington, DC: International Monetary Fund. Retrieved from:
<https://www.imf.org/external/pubs/ft/sdn/2015/sdn1520.pdf>
- Gunther, C. F. (1994). Museumgoers: Lifestyles and learning characteristics. In: Hooper-Greenhill, E. (Ed.), *The Educational Role of the Museum* (pp. 286-297). New York, NY: Routledge.
- Gupta, K., Sleezer, C. M., & Russ-Eft, D. F. (2014). *A practical guide to Needs Assessment* (3rd ed.). Electronic book. doi:10.1002/9781118826164
- Hannum, K. M., & Kaufman, R. (n.d). *Applying the Organizational Elements Model to Leadership Evaluation*. Retrieved from: <https://m.aes.asn.au/images/images-old/stories/files/conferences/2008/Papers/p46.pdf>
- Harris, M. (2013). *Creating an appreciation of Money: Contextualized Financial Education through monetary collections*. Paper presented at the International Committee of Money and Banking Museums (ICOMON) E-Proceedings, Rio de Janeiro, Brazil. Retrieved from:
http://network.icom.museum/fileadmin/user_upload/minisites/icomon/pdf/Creating_an_appreciation_of_money.pdf
- Harrison, A. K. (2014). Ethnography. In: Leavy, P. (Ed.), *The Oxford Handbook of Qualitative Research* (2nd ed.) (pp.223-253). doi: 10.1093/oxfordhb/9780199811755.013.023
- Hartree, A. (1984). Malcolm Knowles' theory of Andragogy: A critique. *International Journal of Lifelong Education*, 3(3), 203-210. doi: 10.1080/0260137840030304
- Hastings, J. S., Madrian, B. C., & Skimmyhorn, W. L. (2012). Financial Literacy, Financial Education and Economic Outcomes. *National Bureau of Economic Research Working Paper*, No. 18412. doi: 10.3386/w18412

- Hatcher, T., & Bowles, T. (2006). Bridging the gap between Human Resources Development and Adult Education: Part one, assumptions, definitions, and critiques. *New Horizons in Adult Education & Human Resource Development*, 25(4), 12-28. <https://doi.org/10.1002/nha3.10248>
- Hayward, J. (1992). Exhibit environments enhance educational effectiveness. *The Journal of Museum Education*, 17(3), 15-16. doi: 10.5617/nordina.652
- Hean, S., Craddock, D., & O'Halloran, C. (2009). Learning theories and Interprofessional Education: A user's guide. *Learning in Health and Social Care*, 8(4), 250-262. <https://doi.org/10.1111/j.1473-6861.2009.00227.x>
- Hein, G. E. (1995). Evaluating Teaching and Learning in museums. In: Hooper-Greenhil, E. (Ed.), *Museum: Media: Message* (pp. 189-203). London, England: Routledge.
- Hein, G. E. (1997). *The maze and the web: Implications of Constructivist Theory for visitor studies*. Retrieved from: http://www.george-hein.com/papers_online/mazeweb/mazeweb_1997.html
- Hein, G. E. (2004) John Dewey and Museum Education. *Curator* 47(4), 413-427. <https://doi.org/10.1111/j.2151-6952.2004.tb00136.x>
- Hein, G. E. (2006a). John Dewey's "Wholly Original Philosophy" and its significance for museums. *Curator*, 49(2), 181-203. <https://doi.org/10.1111/j.2151-6952.2006.tb00211.x>
- Hein, G. E. (2006b). Museum Education. In: McDonald, S. (Ed.), *A Companion to Museum Studies* (pp. 340-352). Oxford, England: Blackwell.
- Hein, G. E. (2013). Progressive Museum Education: Examples from the 1960's. *International Journal of Progressive Education*, 9(2), 61-76. Retrieved from: <http://inased.org/v9n2/ijpev9n2.pdf>

- Henschke, J. A. (2011). Considerations regarding the future of Andragogy. *Adult Learning*, 22(1), 34–37. <https://doi.org/10.1177/104515951102200109>
- Hogarth, J. M. (2006). Financial Education and Economic Development. Paper presented at the Improving Financial Literacy International Conference of G-8 in Cooperation with the Organization for Economic Co-operation and Development (OECD), Moscow, Russia. Retrieved from: <https://www.oecd.org/finance/financial-education/37742200.pdf>
- Hohenstein, J., & Moussouri, T. (2017). *Museum Learning: Theory and Research as tools for enhancing practice*. London, England: Routledge. <https://doi.org/10.4324/9781315696447>
- Holton, E. F. (2002). Theoretical assumptions underlying the performance paradigm of Human Resource Development. *Human Resources Development International*, 5(2), 199–215. doi: 10.1080/13678860110057629
- Holton, E. F., Bates, R. A., & Naquin, S. S. (2000). Large-scale Performance-driven Training Needs Assessment: A case study. *Public Personnel Management*, 29(2), 249–268. <https://doi.org/10.1177/009102600002900207>
- Holton, E. F., Swanson, R., & Naquin, S. S. (2001). Andragogy in practice: Clarifying the Andragogical model of Adult Learning. *Performance Improvement Quarterly*, 14(1), 118-143. <https://doi.org/10.1111/j.1937-8327.2001.tb00204.x>
- Hooper-Greenhill, E. (1994). Museum Education. In: Hooper-Greenhill, E. (Ed.), *The Educational Role of the Museum* (pp. 229-257). New York, NY: Routledge.
- Hung, H. A., Parker, A., & Yoong, J. (2009). Defining and measuring Financial Literacy. *RAND Corporation Working Papers*, No. 708. Retrieved from: https://www.rand.org/content/dam/rand/pubs/working_papers/2009/RAND_WR708.pdf

- ICOM. International Council of Museums (2019). *Standing Committee for Museum Definition, Prospects and Potentials (MDPP)*. Retrieved from: https://icom.museum/wp-content/uploads/2019/01/MDPP-report-and-recommendations-adopted-by-the-ICOM-EB-December-2018_EN-2.pdf
- IMF. International Monetary Fund. (2021). Retrieved from: <https://www.imf.org/en/About/Factsheets/Sheets/2016/08/01/16/20/Monetary-Policy-and-Central-Banking#:~:text=A%20key%20role%20of%20central,major%20changes%20over%20re-cent%20decades.>
- Jacobs, R. L. (2006). Perspectives on Adult Education, Human Resource Development, and the emergence of Workforce Development. *New Horizons in Adult Education & Human Resource Development*, 20(1), 21–31. <https://doi.org/10.1002/nha3.20049>
- Jacobs, R. L. (2013). Developing a dissertation research problem: A guide for doctoral students in Human Resource Development and Adult Education. *New Horizons in Adult Education and Human Resource Development*, 25(3). doi: 10.1002/nha3.20034
- Jacobs, R. L. (2014). System theory in HRD. In: Chalofsky, N., Rocco, T., & Morris, L. (Eds), *Handbook of Human Resource Development* (pp.21-39). San Francisco, CA: Wiley.
- Jacobs, R. L., & Osman-Gani, A. M. (2004). *Institutionalization of Organizational Change: A Study of HRD Interventions in Singaporean, US, Japanese, and German Companies*. Retrieved from: <https://files.eric.ed.gov/fulltext/ED492211.pdf>
- Jacobs, R. L., Russ-Eft, D., & Zidan, S. (2001). *Institutionalizing Organizational Change through Cascade Training: Implications for HRD Research*. Paper presented at the Academy of Human Resource Development (AHRD) Conference Proceedings, Tulsa, Oklahoma, February. Retrieved from: <https://files.eric.ed.gov/fulltext/ED453426.pdf>

- Janesick, V. J. (2014). Oral History Interviewing: Issues and possibilities In: Leavy, P. (Ed.), *The Oxford Handbook of Qualitative Research* (2nd ed.) (pp. 300-314). doi: 10.1093/oxfordhb/9780199811755.013.023
- Jarvis, P. (2010). *Adult Education and Lifelong Learning* (4th ed.). New York, NY: Routledge.
- Jeffery-Clay, K. R. (1998). Constructivism in museums: How museums create meaningful learning environments. *Journal of Museum Education*, 23(1), 3-7. <https://doi.org/10.1080/10598650.1998.11510362>
- Jensen, N. (1994). Children, teenagers and adults in museums: A developmental perspective. In: Hooper-Greenhill, E. (Ed.), *The Educational Role of the Museum* (pp. 268-274). New York, NY: Routledge.
- Kaiser, T., & Menkhoff, L. (2017). Does financial education impact financial literacy and financial behavior, and if so, when? *The World Bank Economic Review*, 31(3), 611–630. doi: 10.1093/wber/lhx018
- Kamis, E. (1979). A witness for the defense of Needs Assessment. *Evaluation and Program Planning*, 2, 7–12. [https://doi.org/10.1016/0149-7189\(79\)90040-5](https://doi.org/10.1016/0149-7189(79)90040-5)
- Kampmann, U. (2013). A museum is a museum is a museum. *The Future of Money Museums*, 2(2), 2-3. Mint World Compendium. Retrieved from: https://muenzenwoche.de/wp-content/uploads/2020/02/Mintworld_Compndium_4.pdf
- Kaufman, R. (1977a). A possible taxonomy of Needs Assessments. *Educational Technology*, 17(11), 60-64. Retrieved from <http://www.jstor.org/stable/44421267>
- Kaufman, R. (1977b). Needs Assessment: Internal and External. *Journal of Instructional Development*, 1(1), 5-8. <https://doi.org/10.1007/BF02904307>
- Kaufman, R. (1981). Determining and diagnosing organizational needs. *Group & Organization Studies*, 6(3), 312–322. <https://doi.org/10.1177/105960118100600307>

- Kaufman, R. (1983). A holistic planning model: A system approach for improving organizational effectiveness and impact. *Performance & Instruction Journal*, 22(8), 3-12. <https://doi-org.proxy2.library.illinois.edu/10.1002/pfi.4150220803>
- Kaufman, R. (1986). Obtaining functional results: Relating Needs Assessment, Needs Analysis, and Objectives. *Educational Technology*, 26(1), 24-27. Retrieved from <http://www.jstor.org/stable/44424561>
- Kaufman, R. (2005). Defining and delivering measurable value: A Mega Thinking and Planning Primer. *Performance Improvement Quarterly*, 18(3), 6-16. <https://doi-org.proxy2.library.illinois.edu/10.1111/j.1937-8327.2005.tb00337.x>
- Kaufman, R. (2005b). Choosing Success: The rationale for thinking, planning, and doing Mega. *Educational Technology*, 45(3), 59-61. Retrieved from <http://www.jstor.org/stable/44429213>
- Kaufman, R. (2006). *Change, Choices, and Consequences: A Guide to Mega Thinking and Planning*. Amherst, MA: HRD Press.
- Kaufman, R. (2009). Mega Thinking and Planning: An introduction to defining and delivering individual and organizational success. *Performance Improvement Quarterly*, 22(2), 5-15. doi:10.1002/piq.20052.
- Kaufman, R. (2011). *The manager's pocket guide to Mega Thinking and Planning*. Amherst, MA: HRD Press.
- Kaufman, R. (2018a). A Hierarchy of Planning: Where you start can make a difference. *Performance Improvement*, 57(10), 37-40. <https://doi-org.proxy2.library.illinois.edu/10.1002/pfi.21812>
- Kaufman, R. (2018b). A glossary of terms for Mega Thinking and Planning. *Performance Improvement*, 57(6), 57-65. <https://doi-org.proxy2.library.illinois.edu/10.1002/pfi.21793>

- Kaufman, R. (2018c). Revisiting Mega as the central focus for defining and delivering worthy results. *Performance Improvement*, 58(7), 20-23. doi:10.1002/pfi.21885
- Kaufman, R. (2018d). Current concepts and the tool of Mega Thinking and Planning: An overview and summary. *Performance Improvement*, 57(6) 9-14
<https://doi.org/10.1002/pfi.21789>
- Kaufman, R., & Carron, A. (1980). Utility and self-sufficiency in the selection of educational alternatives. *Journal of Instructional Development*, 4(1), 17-27. Retrieved from <http://www.jstor.org/stable/30220634>
- Kaufman, R., & Christensen, B. D. (2019). Needs Assessment: Three approaches with one purpose. *Performance Improvement*, 58(3), 28-33. <https://doi.org/10.1002/pfi.21840>
- Kaufman, R., & Lick, D.W. (2005). Mega-planning for online learning and technology change. *Encyclopedia of Distance Learning*. doi: 10.4018/978-1-59140-555-9.ch190
- Kaufman, R., Stakenas, R.G., Wager, J.C., & Mayer, H. (1981). Relating Needs Assessment, Program Development, Implementation, and Evaluation. *Journal of Instructional Development*, 4(4), 17-26. Retrieved from: <https://www.jstor.org/stable/30220657>
- Kaufman, R., & Valentine, G. (1989). Relating Needs Assessment and Needs Analysis. *Performance & Instruction*, 28(10), 10-14. <https://doi-org.proxy2.library.illinois.edu/10.1002/pfi.4170281005>
- Kayes, D. C. (2002). Experiential Learning and its critics: Preserving the role of experience in Management Learning and Education. *Academy of Management Learning & Education*, 1(2), 137–149. <https://doi.org/10.5465/AMLE.2002.8509336>
- Kelly, C. (1997). David Kolb, The Theory of Experiential Learning, and ESL. *The Internet TESL Journal*, 3(9). Retrieved from: <http://iteslj.org/Articles/Kelly-Experiential/>

- Kelly, L. (2007). *Visitors and learners: Adult museum visitor's learning identities*. Paper Presented at the International Committee for Education and Cultural Action Conference - ICOM, Vienna, Austria. Retrieved from: <https://researchgate.net/publication/228614737>
- Kim, J., You, J., & Park, S. Y. (2016). Adult Learning for social change in museums: An exploration of sociocultural learning approaches to community engagement. *Journal of Adult and Continuing Education*, 22(2), 184-198. <https://doi-org.proxy2.library.illinois.edu/10.1177/1477971416672328>
- Kimpston, R., & Stockton, W. (1979). Needs Assessment: A problem of priorities. *Educational Technology*, 19(6), 16-21. Retrieved from <http://www.jstor.org/stable/44421467>
- Klapper, L. F., Lusardi, A., & Panos, G.A. (2012). Financial literacy and the financial crisis. *National Bureau of Economic Research Working Paper*, No. 17930. Retrieved from: https://www.nber.org/system/files/working_papers/w17930/w17930.pdf
- Kolb, D. A. (1981). Learning styles and disciplinary differences. In: Chickering, A. (Ed.), *The Modern American College* (pp.232-255). San Francisco, CA: Jossey-Bass.
- Kolb, D. A. (1984). *Experiential Learning: Experience as the source of Learning and Development*. Englewood Cliffs, NJ: Prentice-Hall.
- Kolb, D. A., Boyatzis, R., & Mainemelis, C. (2000). Experiential Learning Theory: Previous research and new directions. In: Sternberg, R. J., & Zhang L. F. (Eds.), *Perspectives on Cognitive Learning and Thinking Styles*. Retrieved from: <https://learningfromexperience.com/research-library/experiential-learning-theory/>
- Kolb, A. Y., & Kolb, D. A. (2009). Experiential Learning Theory: A dynamic, holistic approach to Management Learning, Education and Development. In: Armstrong, S. J., & Fukami, C.V. *The SAGES Handbook of Management Learning, Education and*

Development (pp. 42-68). Retrieved from: <https://learningfromexperience.com/research-library/experiential-learning-theory-working-paper/>

Kolb, A. Y., & Kolb, D. A. (2010). Learning to play, playing to learn: A case study of a ludic learning space. *Journal of Organizational Change Management*, 23(1), 26–50. <https://doi.org/10.1108/09534811011017199>

Kolb, D. A., & Yeganeh, B. (2012). Deliberate Experiential Learning: Mastering the Art of Learning from Experience. In: Elsbach, K., Kayes, C., & Kayes, A. (Eds.). *Contemporary Organizational Behavior in Action* (1st ed.) (pp. 1-11). Upper Saddle River, NJ: Pearson Education. Retrieved from: <https://learningfromexperience.com/research-library/deliberate-experiential-learning/>

Komarac, T., Ozretic-Dosen, D., & Skare, V. (2020). Managing Edutainment and perceived authenticity of museum visitor experience: Insights from qualitative study. *Museum Management and Curatorship*, 35(2), 160-181, doi: 10.1080/09647775.2019.1630850

Koshy, E., Koshy, V., & Waterman, H. (2011). *Action Research in Healthcare*. London, England: Sage.

Knowles, M. (1975). Adult Education New Dimensions. *Educational Leadership*, 33(2), 85-88. Retrieved from: <http://content.ebscohost.com/ContentServer.asp?EbscoContent=dGJyMNHX8kSepM4yOvsOLCmsEmep7RSsKe4Sq%2BWxWXS&ContentCustomer=dGJyMPGut1C3rLZNuePfgeyx43zx1%2B6B&T=P&P=AN&S=R&D=a9h&K=7720896>

Knowles, M. (1978). Andragogy: Adult Learning Theory in perspective. *Community College Review*, 5(3), 9–20. <https://doi.org/10.1177/009155217800500302>

Knowles, M. (1981). *The Modern Practice of Adult Education: From Pedagogy to Andragogy*. New York, NY: Cambridge Book.

- Knowles, M. (1984). *The Adult Learner: A neglected species* (3rd ed.). Houston, TX: Gulf.
- Knowles, M., Holton, E. F., & Swanson, R. A. (2015). *The Adult Learner: The definitive classic in Adult Education and Human Resource Development* (8th ed.). London, England: Taylor & Francis.
- Kuchinke, P. K. (2010). Human Development as a central goal for Human Resource Development. *Human Resource Development International*, 13(5), 575-585. <https://doi.org/10.1080/13678868.2010.520482>
- Kucukaydin, I., & Cranton, P. (2013). Critically questioning the Discourse of Transformative Learning Theory. *Adult Education Quarterly*, 63(1), 43–56. <https://doi.org/10.1177/0741713612439090>
- Kunstgespräche, J. (n.d.) *Adult Education and the Museum: New visions, trends and innovations for the visitor orientation after 2000*. Retrieved from: https://is.muni.cz/el/1421/jaro2013/UEV_23/um/40458626/Adult_education_and_the_museum.pdf
- Lanigan, M. L. (2007). Innovative practices for needs assessors. *Performance Improvement*, 46(9), 23-31. <https://doi.org/10.1002/pfi.161>
- Leavy, P. (2014). *The Oxford Handbook of Qualitative Research* (2nd ed.). doi: 10.1093/oxfordhb/9780199811755.013.023
- Lee, M. (2001). A refusal to define HRD. *Human Resource Development International*, 4(3), 327-341. doi: 10.1080/13678860126442
- Lee, M. (2003). A critical analysis of Andragogy: The perspective of foreign-born learners. In: Baumgartner, L.M., Lee, M., Birden, S., & Flowers, D. (Eds.). *Adult Learning Theory: A primer* (pp. 17-21). Center on Education and Training for Employment. Information Series No. 392. Retrieved from: <https://files.eric.ed.gov/fulltext/ED482337.pdf>

- Lee, Y-F., Altschuld, J. W., & White, J. L. (2007). Problems in Needs Assessment data: Discrepancy analysis. *Evaluation and Program Planning*, 30(3), 258-266. <https://doi.org/10.1016/j.evalprogplan.2007.05.005>
- Leigh, D., Watkins, R., Platt, W.A., & Kaufman, R. (2000). Alternate models of Needs Assessment: Selecting the right one for your organization. *Human Resource Development Quarterly*, 11(1), 87-93. [https://doi.org/10.1002/1532-1096\(200021\)11:1<87::AID-HRDQ7>3.0.CO;2-A](https://doi.org/10.1002/1532-1096(200021)11:1<87::AID-HRDQ7>3.0.CO;2-A)
- Leung, L. (2020). Validity, reliability, and generalizability in Qualitative Research. *Journal of Family Medicine and Primary Care*, 4(3), 324-327. doi: 10.4103/2249-4863.161306
- Levitt, L. (1979). Critique: Andragogy revisited Part II. *Adult Education*, 30(1), 52-57. <https://doi.org/10.1177/074171367903000104>
- Ley, K., Driscoll, M., & Kaufman, R. (1990). Application of the rational set generator to the Organizational Elements Model. *Educational Technology*, 30(2), 25-31. Retrieved from <http://www.jstor.org/stable/44425829>
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic Inquiry*. Newbury Park, CA: Sage.
- Linkow, P. (1985). HRD at the roots of corporate strategy. *Training and Development Journal*, 39(5), 85-87. Retrieved from: <http://content.ebscohost.com/ContentServer.asp?EbscoContent=dGJyMNHX8kSeprU4zOX0OLCmsEiep7VSsK%2B4Sa%2BWxWXS&ContentCustomer=dGJyMPGut1C3rLZNuePfgexy43zx1%2B6B&T=P&P=AN&S=R&D=bsu&K=9080379>
- Lowman, J. A. (2015). *Adult Education in a Museum Setting Requires Reinforcement*. Electronic theses, projects and dissertations, Paper 227. San Bernardino, CA: California State University. Retrieved from <https://core.ac.uk/download/pdf/55333417.pdf>

- Lucier, K. H. (2008). A consultative training program: Collateral effect of a needs assessment. *Communication Education, 57*(4), 482-489. doi: 10.1080/03634520802094305
- Lusardi, A. (2019). Financial Literacy and the need for Financial Education: Evidence and implications. *Swiss Journal of Economics and Statistics, 155*(1). Retrieved from: <https://sjes.springeropen.com/articles/10.1186/s41937-019-0027-5>
- Lusardi, A. (2012). *Big ideas: A museum for Financial Education* [Web blog]. Retrieved from: <http://annalusardi.blogspot.com/2012/05/big-ideas-museum-for-financial.html>
- Lusardi, A., & Mitchell, O. (2009). How ordinary consumers make complex economic decisions: Financial Literacy and Retirement Readiness. *National Bureau of Economic Research Working Paper*, No. 15350. doi: 10.3386/w15350
- Lynham, A. (2000). Theory building in the Human Resource Development profession. *Human Resource Development Quarterly, 11*(2), 159-178. [https://doi.org/10.1002/1532-1096\(200022\)11:2<159:AID-HRDQ5>3.0.CO;2-E](https://doi.org/10.1002/1532-1096(200022)11:2<159:AID-HRDQ5>3.0.CO;2-E)
- Madsen, K. M., & Jensen, J. F. (2021). Learning through exploration at museum exhibitions. *Museum Management and Curatorship, 36*(2), 154-171. doi: 10.1080/09647775.2020.1803115
- Marsick, V. J., & Volpe, M. (1999). The nature and need for Informal Learning. *Advances in Developing Human Resources, 1*(3), 1-9. <https://doi.org/10.1177/152342239900100302>
- Marsick, V. J., & Watkins, K. E. (2001). Informal and Incidental Learning. *New Direction for Adult and Continuing Education, 89*, 25-34. doi: 10.1002/ace.5
- Marsick, V. J., Volpe, M., & Watkins, K.E. (1999). Theory and practice of Informal Learning in the knowledge era. *Advances in Developing Human Resources, 1*(3), 80-95. <https://doi.org/10.1177/152342239900100309>

- Massarani, L., Rocha, J., Poenaru, L., Bravo, M., Singer, S., & Sánchez, E. (2020). O olhar dos adolescentes em uma visita ao Museu Interativo de Economia (MIDE), México [The teenagers' vision in a visit to the Museu Interativo de Economia (MIDE), México]. *Revista Iberoamericana de Ciencia, Tecnología y Sociedad*, 15, 173-195. Retrieved from: <https://www.arca.fiocruz.br/handle/icict/43988>
- Matijević, M. (2011). The New Media and Informal Learning. *Digital Technologies and New Forms of Learning*, 271-278. Split, Croatia: Faculty of Philosophy University of Split. Retrieved from: <https://files.eric.ed.gov/fulltext/ED521060.pdf>
- Maxwell, L. E., & Evans, G. W. (2015). Museums as learning settings: The importance of the physical environment. *Journal of Museum Education*, 27(1), 3-7. <https://doi.org/10.1080/10598650.2002.11510454>
- McCracken, M., & Wallace, M. (2000). Towards a redefinition of Strategic HRD. *Journal of European Industrial Training*, 24(5), 281-290. doi: 10.1108/0309059001037d2056
- McCray, K. H. (2016). Gallery Educators as adult learners: The active application of Adult Learning Theory. *Journal of Museum Education*, 41(1), 10-21. doi: 10.1080/10598650.2015.1126058.
- McKenzie, L. (1977). The issue of Andragogy. *Adult Education*, 27(4), 225–229. <https://doi.org/10.1177/074171367702700403>
- McLeod, S. A. (2017, October 24). *Kolb's Learning Styles and Experiential Learning Cycle*. Simply Psychology. Retrieved from: <https://www.simplypsychology.org/learning-kolb.html>
- McRaney, D. (2008). New Directions in Adult Education. *The Journal of Museum Education*, 33(1), 33-42. Retrieved from <http://www.jstor.org/stable/40479603>

- Mezirow, J. (1981). A critical theory of Adult Learning and Education. *Adult Education*, 32(1), 3–24. <https://doi.org/10.1177/074171368103200101>
- Mezirow, J. (1994). Understanding Transformation Theory. *Adult Education Quarterly*, 44(4), 222–232. <https://doi.org/10.1177/074171369404400403>
- Mezirow, J. (1996). Contemporary paradigms of learning. *Adult Education Quarterly*, 46(3), 158–172. <https://doi.org/10.1177/074171369604600303>
- Mezirow, J. (1997). Transformative Learning: Theory to Practice. *New Directions for Adult and Continuing Education*, 74, 5-12. <https://doi-org.proxy2.library.illinois.edu/10.1002/ace.7401>
- Mezirow, J. (1998). Postmodern critique of Transformation Theory: A response to Pietrykowski. *Adult Education Quarterly*, 49(1), 65–67. <https://doi.org/10.1177/074171369804900107>
- Medel-Añonuevo, C., & Bernhardt, A. (2011). Sustaining advocacy and action on women’s participation and gender equality in adult education. *International Review of Education*, 57(1/2), 57-68. Retrieved from <http://www.jstor.org/stable/41480684>
- Merriam-Webster Dictionary (2020). Retrieved form: <https://www.merriam-webster.com/>
- Merriam, S. B. (1987). Adult Learning and Theory Building: A review. *Adult Education Quarterly*, 37(4), 187–198. <https://doi.org/10.1177/0001848187037004001>
- Merriam, S. B. (1988). Finding your way through the maze: A guide to the literature on Adult Learning. *Lifelong Learning*, 11(6), 4-7. Washington, DC: American Association of Continuing Education.
- Merriam, S. B. (2004). The role of cognitive development in Mezirow’s Transformational Learning Theory. *Adult Education Quarterly*, 55(1), 60–68. <https://doi.org/10.1177/0741713604268891>

- Merriam, S. B. (2008). Adult Learning theory for the twenty-first century. *New Directions for Adult & Continuing Education*, 119, 93-98. <https://doi.org/10.1002/ace.309>
- Merriam, S. B., & Brockett, R. G. (1997). *The profession and practice of Adult Education: An introduction*. San Francisco, CA: Jossey-Bass.
- Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in Adulthood: A comprehensive guide* (3rd ed.). San Francisco, CA: Josey-Bass.
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative Research: A guide to design and implementation* (4th ed.). San Francisco, CA: Jossey-Bass.
- Mills, A. J., Durepos, G., & Wiebe, E. (2010). *Encyclopedia of Case Study Research*. Thousand Oaks, CA: Sage. doi: 10.4135/9781412957397
- Minehan, C. E. (2006). *The role of central banks in Economic and Personal Financial Education*. Speech at the Conference of Narodowy Bank Polski, September. Warsaw, Poland. Retrieved from: <http://www.bos.frb.org/news/speeches/cem/2006/092806.htm>.
- Mirghadr, L., Farsani, N.T., Shafiei, Z., & Hekmat, M. (2018). Identification of key components of visitor education in a museum. *Museum Management and Curatorship*, 33(3), 223-234. doi: 10.1080/09647775.2018.1466192
- Mitsakis, F. V. (2017). Employees' perspectives on strategic Human Resource Development before and after the global financial crisis: Evidence from the Greek banking sector. *International Journal of Training and Development*, 21(4), 285-304. <https://doi.org/10.1111/ijtd.12112>
- MOAF. Museum of American Finance (2013). Finance museums throughout the world unite to promote Financial Literacy globally. *Financial History Museum News*. Retrieved from: https://www.moaf.org/news/press_releases/2013-06-07-finance-museums-throughout-the-world-unite-to-promote-financial-literacy-globally

- Moore, D. T. (2010). Forms and Issues in Experiential Learning. *New Directions for Teaching & Learning*, 124, 3-13. doi: 10.1002/tl.415
- Morris, J. (2018). Decentering ingenuity: Calculation, intuition and atmospheres in the Bank of England's Financial Literacy assemblages. *Geoforum*, No. 90, 45-54. <https://doi.org/10.1016/j.geoforum.2018.01.018>
- Mulhall, A. (2003). In the field: Notes on observation in Qualitative Research. *Journal of Advanced Nursing*, 41(3), 306-313. <https://doi.org/10.1046/j.1365-2648.2003.02514.x>
- MIDE. Museo Interactivo de Economía (2021). Retrieved from <https://www.mide.org.mx/>
- Monk, D. F. (2013). John Dewey and Adult Learning in museums. *Adult Learning*, 24(2), 63-71. doi: <https://doi.org/10.1177/1045159513477842>
- Moore, M., & Dutton, P. (1978). Training Needs Analysis: Review and critique. *The Academy of Management Review*, 3, 532-545. <https://doi.org/10.5465/amr.1978.4305749>
- Newman, I. (2000). *A conceptualization of Mixed Methods: A Need for Inductive/Deductive approach to conducting Research*. Paper presented at the Annual Meeting of the American Educational Association, New Orleans. Retrieved from: <https://files.eric.ed.gov/fulltext/ED443849.pdf>
- OECD. Organization for Economic Co-operation and Development. (2005). *Improving Financial Literacy: Analysis of Issues and Policies*. Retrieved from: <https://www.oecd.org/finance/financial-education/improvingfinancialliteracyanalysisofissuesandpolicies.htm>
- OECD. Organization for Economic Co-operation and Development. (2006). *The Importance of Financial Education*. Retrieved from: <http://www.oecd.org/finance/financial-education/37087833.pdf>

- OECD. Organization for Economic Co-operation and Development. (2018). *Programme for International Student Assessment Results*. Retrieved from: https://www.oecd.org/pisa/publications/PISA2018_CN_BRA.pdf
- OECD. Organization for Economic Co-operation and Development. (2020). *International Survey of Adult Financial Literacy*. Retrieved from: <https://www.oecd.org/financial/education/oecd-infe-2020-international-survey-of-adult-financial-literacy-presentations.pdf>
- Oliver, R. (2007) *Reusing and sharing learning designs in Enhancing Higher Education, Theory and Scholarship*. Proceedings of the 30th HERDSA Annual Conference, Adelaide, July. Retrieved from: <https://ro.ecu.edu.au/cgi/viewcontent.cgi?article=2646&context=ecuworks>
- OMFIF. Official Monetary and Financial Institutions Forum (2020). *Central Bank Art Collections*. Retrieved from: <https://www.omfif.org/wp-content/uploads/2020/10/11-Art-collections.pdf>
- Orna-Ornstein, J. (2001). *Coins are small and boring: The importance of an education programme for a numismatic collection*. Paper presented at the Proceedings of the 8th Meeting of the International Committee of Money and Banking Museums (ICOMON), Barcelona, Spain. Retrieved from: http://network.icom.museum/fileadmin/user_upload/minisites/icomon/publications/e-proceedings_pre_2006/Barcelona_2001/John_Orna-Ornstein/Coins_are_small_and_boring__the_importance_of_an_education_programme_for_a_numismatic_collection.pdf
- Osborne, J. F. (1998). Constructivism in museums: A response. *Journal of Museum Education*, 23(1), 8-9. <https://doi.org/10.1080/10598650.1998.11510363>

- Pekarik, A. (2007). Studying visitors and making museums better. *Curator*, 50(1), 131-134.
<https://doi.org/10.1111/j.2151-6952.2007.tb00256.x>
- Percy, R. (2005). The contribution of Transformative Learning Theory to the practice of Participatory Research and Extension: Theoretical reflections. *Agriculture and Human Values*, 22(2), 127-136. <https://doi.org/10.1007/s10460-004-8273-1>
- Pinheiro, R. P. (2008). Educação Financeira e Previdenciária: A nova fronteira dos fundos de pensão [Financial and Social Security Education: The new frontier of pension funds]. *Fundos de Pensão e Mercado de Capitais*. São Paulo, Brazil: Peixoto Neto.
- Potrich, A.C.G., Vieira, K. M., & Kirch, G. (2018). How well do women do when it comes to Financial Literacy? Proposition of an indicator and analysis of gender differences. *Journal of Behavioral and Experimental Finance*, 17, 28-41.
<https://doi.org/10.1016/j.jbef.2017.12.005>.
- Preskill, H. (1991). A comparison of data collection methods for assessing Training Needs. *Human Resource Development Quarterly*, 2(2), 143-155.
<https://doi.org/10.1002/hrdq.3920020207>
- Prior, L. (2014). Content Analysis. In: Leavy, P. (Ed.), *The Oxford Handbook of Qualitative Research* (2nd ed.) (pp. 359-379). doi: 10.1093/oxfordhb/9780199811755.013.023
- Rachal, J. R. (2002). Andragogy's detectives: A critique of the present and a proposal for the future. *Adult Education Quarterly*, 52(3). 210-227. Retrieved from:
<http://content.ebscohost.com/ContentServer.asp?EbscoContent=dGJyMNHr7ESeprQ4yOvsOLCmsEmep7NSSa64S7WWxWXS&ContentCustomer=dGJyMPGut1C3rLZNuePfgex43zx1%2B6B&T=P&P=AN&S=R&D=eft&K=507764368>
- Reio Jr., T. G. (2013). Exploring the links between Adult Education and Human Resource Development: Learning, risk-taking, and democratic discourse. *New Horizons in Adult*

Education & Human Resource Development, 25(4), 4–11.
<https://doi.org/10.1002/nha3.20042>

Remund, D. L. (2010). Financial Literacy explicated: The case for a clearer definition in an increasingly complex economy. *The Journal of Consumer Affairs*, 44(2), p. 276-295.
<https://doi.org/10.1111/j.1745-6606.2010.01169.x>

Rennie, L., & Johnston, D. J. (2004). The nature of Learning and its implications for research on Learning from Museums, *Science Education*, 88(1), 5-16.
<https://doi.org/10.1002/sce.20017>

Roa, M., Alonso, G., & Rodriguez, D. (2014). *Financial Education and Inclusion in Latin America and the Caribbean programs of central banks and financial superintendencias*. Ciudad de México, Mexico: Centro de Estudios Monetários Latino Americanos (CEMLA). Retrieved from: <https://www.cemla.org/PDF/otros/2014-10-Financial-Education-Inclusion-LAC.pdf>

Robinson, D. G. & Robinson, J. C. (1998). A focus on Performance: What is it? In: Robinson, D.G. & Robinson, J.C. (Eds.), *Moving from Training to Performance: A practical guidebook* (pp.3-12). San Francisco, CA: American Society for Training and Development (ASTD) and Berrett-Koehler.

Robinson, D. G. & Robinson, J. C. (2008). *Performance Consulting: A practical guide for HR and learning professionals* (2nd ed.). San Francisco, CA: Berrett-Koehler.

Roederer, C., & Filser, M. (2018). Revisiting the museum experience. *Qualitative Market Research: An International Journal*, 21(9). doi: 10.1108/QMR-01-2017-0002

Roessger, K. M., Roumell, E. A., & Weese, J. (2020). Rethinking andragogical assumptions in the global age: How preferences for andragogical learning vary across people and cultures. *Studies in Continuing Education*, 1-25. doi: 10.1080/0158037X.2020.1732335

- Rosenstein, C. (2010). When is a museum a public museum? Considerations from the point of view of public finance. *International Journal of Cultural Policy*, 16(4), 449-465. doi: 10.1080/10286630902935178
- Rossett, A. (1982). A typology for generating Needs Assessments. *Journal of Instructional Development*, 6(28), 28-33. <https://doi.org/10.1007/BF02905113>
- Rummler, G., & Brache, A. (2012). *Improving Performance: How to manage the white space on the organization chart* (3rd ed.). San Francisco, CA: Jossey-Bass.
- Ruona, W. E. A. (2016). Evolving Human Resource Development. *Advances in Developing Human Resources*, 18(4), 551–565. <https://doi.org/10.1177/1523422316660968>
- Ryan, F., Coughlan, M., & Cronin, P. (2009). Interviewing in Qualitative Research: The one-to-one interview. *International Journal of Therapy and Rehabilitation*, 16, 309-314. doi: 10.12968/ijtr.2009.16.6.42433
- Roberts, C. M. & Hyatt, L. (2019). *The dissertation journey: A practical and comprehensive guide to planning, writing, and defending your dissertation* (3rd ed.). Thousand Oaks, CA: Corwin Sage.
- Sachatello-Sawyer, B., & Fellenz, R. (2000). Coming of age: A national study of Adult Museum Programs. *Curator*, 43(2), 147-156. <https://doi.org/10.1111/j.2151-6952.2000.tb00010.x>
- Sahoo, A. K., & Sahoo, C. K. (2012). Impact of strategic HRD initiatives on individual performance. *Productivity*, 53(2), 194-202. Retrieved from: <http://content.ebscohost.com/ContentServer.asp?EbscoContent=dGJyMNHX8kSeprU4zOX0OLCmsEiep7VSsai4TbCWxWXS&ContentCustomer=dGJyMPGut1C3rLZNuePfgeyx43zx1%2B6B&T=P&P=AN&S=R&D=bsu&K=89880999>

- Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). London, England: Sage.
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing and Health*, 23(4), 334-40. doi: 10.1002/1098-240x(200008)23:4<334::aid-nur9>3.0.co;2-g. PMID: 10940958.
- Savoia, J. R. F., Taue, A. S., & Santana, F. A. (2007). Paradigmas da Educação Financeira no Brasil [Paradigms of Financial Education in Brazil]. *Revista de Administração Pública*, 41(6), 1121-1141. Retrieved from: <http://bibliotecadigital.fgv.br/ojs/index.php/rap/article/view/6620>
- Scott, C. (2010). Museums, the public, and public value. *The Journal of Museum Education*, 35(1), 33-42. Retrieved from <http://www.jstor.org/stable/25701639>.
- Shepherd, J. (2016). Planning for Informal Learning: Understanding and simplifying the interpretive process. In: King, B., & Lord, B. (Eds.), *The Manual of Museum Learning* (2nd ed.) (pp.19-26). Lanham, MD: Rowman & Littlefield.
- Simons, H. (2014). Case Study Research: In-Depth understanding in context. In: Leavy, P. (Ed.), *The Oxford Handbook of Qualitative Research* (2nd ed.) (pp. 455-470). doi: 10.1093/oxfordhb/9780199811755.013.023
- Smiraglia, C. (2016). Targeted museum programs for older adults: A research and program review. *Curator: The Museum Journal*, 59, 39-54. doi: 10.1111/cura.12144
- Soiferman, L. K. (2021). *Compare and Contrast Inductive and Deductive Research Approaches*. Winnipeg, Canada: University of Manitoba. Retrieved from: <https://files.eric.ed.gov/fulltext/ED542066.pdf>
- Spock, D. (2006). The puzzle of museum educational practice: A comment on Rounds and Falk. *Curator*, 49(2), 167-180. <https://doi.org/10.1111/j.2151-952.2006.tb00210.x>

- St. Clair, R. (2002). *Andragogy revisited: Theory for the 21st Century? Myths and Realities*. Office of Educational Research and Improvement. Retrieved from: <https://files.eric.ed.gov/fulltext/ED468612.pdf>
- Stark, J. (2006). *The role of central banks in Economic and Personal Finance Education*. Speech at the Conference of Narodowy Bank Polski, September. Warsaw, Poland. Retrieved from: https://www.nbp.pl/Homen.aspx?f=konferencje/NBP_FED/nbp_fed.html
- Stewart, R. G., & Cuffman, D.M. (1998). *Needs Assessment: A systematic approach for successful distance education*. Paper presented at the Mid-South Instructional Technology Conference. Murfreesboro, TN. Retrieved from: <http://www.mtsu.edu/~itconf/proceed98/rstewart.html>
- Stigler, G. (1970). The case, if any, for Economic Literacy. *The Journal of Economic Education*, 1(2), 77-84. doi:10.2307/1182314
- Swanson, R. A. (1995). Human Resource Development: Performance is the key. *Human Resource Development Quarterly*, 6(2), 207-213. <https://doi.org/10.1002/hrdq.3920060208>
- Swanson, R. A. (2007). *Analysis for improving performance: Tools for diagnosing organizations and documenting workplace expertise* (2nd ed.). San Francisco, CA: Berrett-Koehler.
- Swanson, R. A., & Holton III, E. F. (2009). *Foundations of Human Resource Development* (2nd ed.). San Francisco, CA: Berrett-Koehler. [Digital version]. Retrieved from: https://search-alexanderstreet-com.proxy2.library.illinois.edu/view/work/bibliographic_entity%7Cbibliographic_detail

s%7C2341999#page/1/mode/1/chapter/bibliographic_entity|bibliographic_details|23419

99

- Talmy, S. (2011). The interview as collaborative achievement: Interaction, identity, and ideology in a speech event. *Applied Linguistics*, 32, 25-42. doi: 10.1093/applin/amq027
- Taylor, E. (2010). Cultural institutions and Adult Education. *New Directions for Adult and Continuing Education*, 127, 5-14. doi: 10.1002/ace.376
- Taylor, E., & Neill, A. (2008). Museum Education: A nonformal education perspective. *The Journal of Museum Education*, 33(1), 23-32. Retrieved from <http://www.jstor.org/stable/40479602>
- Tisdell, E. J., Taylor, E. W., & Sprow, K. (2010) *Financial Literacy for adult learners in community-based settings: A mixed methods study*. Paper presented at the Adult Education Research Conference, Sacramento, CA. Retrieved from: <https://newprairiepress.org/aerc/2010/papers/75>.
- Tišliar, P. (2017). The development of Informal Learning and Museum Pedagogy in museums. *European Journal of Contemporary Education*, 6(3), 586-592. doi: 10.13187/ejced.2017.3.586
- Torraco, R. J., & Swanson, R. A. (1995). The strategic roles of Human Resource Development. *Human Resource Planning*, 18(4), 10-21. Retrieved from: [http://richardswanson.com/publications/Swanson\(1995\)TheStrategic.pdf](http://richardswanson.com/publications/Swanson(1995)TheStrategic.pdf)
- Traianou, A. (2014). The centrality of Ethics in Qualitative Research. In: Leavy, P. (Ed.), *The Oxford Handbook of Qualitative Research* (2nd ed.) (pp.62-77). doi: 10.1093/oxfordhb/9780199811755.013.023
- Trimby, M. J. (1979). Needs Assessment models: A comparison. *Educational Technology*, 19(12), 24-28. Retrieved from: <https://eric.ed.gov/?id=EJ214689>

- Tseng, C., & McLean, G. N. (2008). Strategic HRD practices as key factors in organizational learning. *Journal of European Industrial Training*, 32(6), 418-432. doi: 10.1108/03090590810886544
- Tucker, E. (2014). Museum Studies. In: Leavy, P. (Ed.), *The Oxford Handbook of Qualitative Research* (2nd ed.) (pp.341-356). doi: 10.1093/oxfordhb/9780199811755.013.023
- Ullmer, E. (1986). Work Design in organizations: Comparing the Organizational Elements Model and the Ideal System Approach. *Educational Technology Archive*, 26, 12-18. Retrieved from: <https://www.jstor.org/stable/44442737>
- Van der Horst, C. A., & Albertyn, R. M. (2018). The importance of metacognition and the experiential learning process within a cultural intelligence–based approach to cross-cultural coaching. *SA Journal of Human Resource Management*, 16(0). <https://doi.org/10.4102/sajhrm.v16i0.951>
- Vallego, R. (2015). Da Galeria Collectio ao Banco Central do Brasil: percursos de uma coleção de arte [From Collectio Gallery to the Banco Central do Brasil: paths of an art collection] (Master's Thesis). Universidade de Brasília, Brasilia, Brazil. Retrieved from: https://repositorio.unb.br/bitstream/10482/18840/5/2015_RachelVallegoRodrigues.pdf
- Vosko, R. S., & Hiemstra, R. (1988). The adult learning environment: Importance of physical features. *International Journal of Lifelong Education*, 7(3), 185-195. doi: 10.1080/0260137880070303
- Walstad, W. (1998). Why it's important to understand Economics. *The Region*, 12, 22-26. Federal Reserve Bank of Minneapolis. Retrieved from: <https://www.minneapolisfed.org/article/1998/why-its-important-to-understand-economics>

- Watkins, R., Leigh, D., Platt, W., & Kaufman, R. (1998). Needs Assessment: A digest, review, and comparison of Needs Assessment literature. *Performance Improvement Journal*, 37(7), 40-53. <https://doi.org/10.1002/pfi.4140370711>
- Watkins, R., Meiers, M. W., & Visser, Y. L. (2012). *A guide to assessing needs: Essential tools for collecting information, making decisions, and achieving development results*. Washington, DC: The World Bank. Retrieved from: <http://documents1.worldbank.org/curated/en/644051468148177268/pdf/663920PUB0EP100essing09780821388686.pdf>
- Watkins, R., & Altschuld, J. M. (2014). A final note about improving Needs Assessment Research and Practice. *New Directions for Evaluation*, 144, 105–114. <https://doi.org/10.1002/ev.20106>
- Way, W. L. (2014). Contextual influences on Financial Behavior: A proposed model for Adult Financial Literacy Education. *New Directions for Adult and Continuing Education*, 141, 25-35. <https://doi.org/10.1002/ace.20082>
- Webb, E. J., Campbell, D. T., Schwartz, R. D., & Sechrest, L. (2000). *Unobtrusive Measures* (Rev. ed.). Thousand Oaks, CA: Sage.
- Weinberger, L. A. (1998). Commonly held theories of Human Resource Development. *Human Resources Development International*, 1(1), 75-93. <https://doi.org/10.1080/13678869800000009>
- White, L. (2005). Making sense of Adult Learning: Experiential Learning. *New Horizons in Adult Education & Human Resources Development*, 14(4), 31-41. <https://doi-org.proxy2.library.illinois.edu/10.1002/nha3.10232>

- White, H. (2009). Theory-based Impact Evaluation: Principles and Practice. *Journal of Development Effectiveness*, 1(3), 271-284. <https://doi.org/10.1080/19439340903114628>
- White, J., & Altschuld, J. (2012). Understanding the “what should be condition” in Needs Assessment data. *Evaluation and Program Planning*, 35(1), 124–132. <https://doi.org/10.1016/j.evalprogplan.2011.09.001>
- Willis, L. E. (2008). Against Financial Literacy Education. *Legal Studies Research Paper*, No. 13, 197-285. Chicago, IL: Loyola University Law School. Retrieved from: <file:///C:/Users/secre.julianams/Downloads/SSRN-id1105384.pdf>
- Witkin, B. (1977). Needs Assessment kits, models and tools. *Educational Technology*, 17(11), 5-18. Retrieved from <http://www.jstor.org/stable/44421256>
- Witkin, B. R. (1994). Needs Assessment since 1981: The state of the practice. *Evaluation Practice*, 15(1), 17–27. <https://doi.org/10.1177/109821409401500102>
- Xu, L., & Zia, B. (2012). Financial Literacy around the world: An overview of the evidence with practical suggestions for the way forward. *The World Bank Policy Research Working Paper*, No. 6107. Washington, DC: The World Bank. <https://doi.org/10.1596/1813-9450-6107>
- Yang, B. (2004). *A critical evaluation of Adult Learning theories and implication for Human Resource Development*. Paper presented at the Academy of Human Resource Development International Conference (AHRD). Austin, TX. Retrieved from: <https://files.eric.ed.gov/fulltext/ED492439.pdf>
- Zaharias, P., Michael, D., & Chrysanthou, Y. (2013). Learning through multi-touch interfaces in museum exhibits: An empirical investigation. *Journal of Educational Technology & Society*, 16(3), 374-384. Retrieved from: https://www.researchgate.net/publication/256364429_Learning_through_Multi-

touch_Interfaces_in_Museum_Exhibits_An_Empirical_Investigation/link/0c960526f85d
416c46000000/download

APPENDIX A: IRB APPROVAL



Office of the Vice Chancellor for Research & Innovation

Office for the Protection of Research Subjects
805 W. Pennsylvania Ave., MC-095
Urbana, IL 61801-4822

Notice of Exempt Determination

November 15, 2021

Principal Investigator	Ronald Jacobs
Protocol Title	<i>Conducting a Needs Assessment to identify the Stakeholders' Perspectives of the future Museum of Economics of Brazil about the main features that should be integrated in its exhibits and programs to promote Adult Learning</i>
Protocol Number	22298
Funding Source	Unfunded
Review Category	Exempt 2 (ii)
Determination Date	November 15, 2021
Closure Date	November 14, 2026

This letter authorizes the use of human subjects in the above protocol. The University of Illinois at Urbana-Champaign Office for the Protection of Research Subjects (OPRS) has reviewed your application and determined the criteria for exemption have been met.

The Principal Investigator of this study is responsible for:

- Conducting research in a manner consistent with the requirements of the University and federal regulations found at 45 CFR 46.
- Requesting approval from the IRB prior to implementing major modifications.
- Notifying OPRS of any problems involving human subjects, including unanticipated events, participant complaints, or protocol deviations.
- Notifying OPRS of the completion of the study.

Changes to an exempt protocol are only required if substantive modifications are requested and/or the changes requested may affect the exempt status.

APPENDIX B: CONSENT FORM

Title: Identifying Stakeholders' Perspectives about which Learning Design Features for Adults should be integrated into the Exhibits and Programs of the future Museum of Economics of Brazil

You are being asked to participate in a voluntary research study. The purpose of this action research study is to identify the stakeholders' perspectives of the future Museum of Economics of Brazil about the main features that should be integrated in its exhibits and programs to promote adult learning. Participating in this study will involve an interview by a digital platform of your convenience and your participation will last approximately half to one hour. Principal Investigator Name and Title: Ronald L. Jacobs, Ph.D., Professor, Human Resource Development

Additional Investigator name and Title: Juliana Mozachi Sandri, Doctor of Education Candidate

Department and Institution: College of Education, University of Illinois at Urbana-Champaign
Contact Information: + 55 61 981734861

What procedures are involved?

The study procedure consists of a recorded interview through a digital platform of your convenience (such as Zoom, Google Meets, or Microsoft Teams).

This research will be performed at day and time of your convenience, to be scheduled. You will need to participate once, and duration will be approximately of one hour.

What are the potential risks and discomforts in participating?

Risks related to this research include frustration of participants for contributing to a project that can be delayed, changed in scope or cancelled. Discomforts may include the unwillingness to disclosure personal perspectives on the issues researched.

Are there benefits to participating in the research?

There are no personal, professional or direct benefits for the participants. Benefits related to this research include contribution to the body of knowledge of Adult Learning in museums; promotion of learning opportunities offered to adults' visitors of the future Museum of Economics of Brazil; increase on the level of Financial Literacy in the adult visitors of the future Museum of Economics of Brazil; and contribution to the achievement of the societal mission of the Banco Central do Brasil.

Will my study-related information be kept confidential?

Faculty, students, and staff who may see your information will maintain confidentiality to the extent of laws and university policies. **Personal identifiers will not be published or presented.**

Will I be reimbursed for any expenses or paid for my participation in this research?

You will not be offered payment for being in this study.

Will my participation imply in any professional relationship with the Banco Central do Brasil?

Your participation in the study does not imply in any professional, hierarchical or formal relationship to the Brazilian Money Museum, the Museum of Economics of Brazil or the Banco Central do Brasil.

Will my participation imply that my opinions and suggestions are going to be implemented in the future Museum of Economics of Brazil?

Your participation in the study does not imply that your opinions and suggestions are going to be implemented by the future Museum of Economics of Brazil.

Am I going to receive any kind of compensation if my ideas are implemented by the future Museum of Economics of Brazil or the Banco Central do Brasil?

The study aims to assess groups of key stakeholders and it will follow the specific methodology of needs assessment to identify the main features for promoting adult learning that might be integrated in the future Museum of Economics of Brazil's exhibits and programs.

If by chance your perceptions coincide with the results of the study, this will not incur in any kind of intellectual property rights or financial compensation.

Can I withdraw or be removed from the study?

If you decide to participate, you are free to withdraw your consent and discontinue participation at any time. Your participation in this research is voluntary. Your decision whether or not to participate, or to withdraw after beginning participation, will not affect your current or future dealings with the Banco Central do Brasil, the Brazilian Money Museum, or the University of Illinois at Urbana-Champaign.

The researcher also has the right to stop your participation in this study without your consent if they believe it is in your best interests. If you were to object to any future changes regarding your participation, send an e-mail with withdraw of Consent to the indicated investigators.

Will data collected from me be used for any other research?

Your de-identified information could be used for future research without additional informed consent.

Who should I contact if I have questions?

If you have questions about this project, you may contact Juliana Mozachi Sandri at +55 61 981734861 or jsandri2@illinois.edu or juliana.mozachi@bcb.gov.br.

For a neutral third party not directly involved in the research, please contact Melissa Machado de Moraes at +55 61 3414 1052.

If you have any questions about your rights as a participant in this study or any concerns or complaints, please contact the University of Illinois at Urbana-Champaign Office for the Protection of Research Subjects at 217-333-2670 or via email at irb@illinois.edu.

Please print this or save this consent form if you would like to retain a copy for your records. If you would like to complete a brief survey to provide OPRS feedback about your experiences as a research participant, please follow the link [here](#) or through a link on the OPRS website: <https://oprs.research.illinois.edu/>. You will have the option to provide feedback or concerns anonymously or you may provide your name and contact information for follow-up purposes.

I have read and understand the above consent form. I certify that I am 18 years old or older and indicate my willingness to voluntarily take part in this study.

APPENDIX C: INTERVIEW PROTOCOL

Date:

Time:

Name:

Position:

Platform used:

Introduction/Welcome:

Thank you for agreeing to participate in this interview. You have been identified as a representative of internal/external stakeholders of the future Museum of Economics of Brazil.

In this interview, we will focus on identifying the stakeholders' perspectives about which learning design features for adults should be integrated into the exhibits and programs of the future Museum of Economics of Brazil. This interview is part of a needs assessment, object of the study in partial fulfillment of the requirements for the Doctoral of Education of the University of Illinois at Urbana-Champaign.

The information that you provide will not be attributed directly to you.

1. Tell me about your position/role as financial educator/digital influencer/manager/executive of BCB. How long have you been in this position?
2. Please describe what you like most and least from the current Museu de Valores. Why? (Input/Process/Product)
3. How could the Museu de Valores be more interesting, if at all? (Process/Product)
4. Do you believe that the current Museu de Valores contributes to the stability of the currency purchasing power, to foster a sound, efficient and competitive financial system and to promote the economic well-being of society? How? Please describe. (Output/Outcome)

As you know, the BCB is developing the first Museum of Economics of South America.

5. How do you believe that the future Museum of Economics of Brazil can contribute more to society? In other words, do you believe that is possible that the future Museum of Economics transforms the adults that come to visit somehow? If yes, please explain.
(Outcome)
6. How do you believe that the future Museum of Economics of Brazil may contribute to the stability of the currency purchasing power, to foster a sound, efficient and competitive financial system and to promote the economic well-being of society? (Output/Outcome)
7. Please describe what you would like to find in the future Museum of Economics of Brazil. (Process/Product/Output/Outcome)
8. When an adult visits the future Museum of Economics of Brazil, what do you think it should be her/his though about the museum experience when she/he gets home?
(Product/Output)
9. What do you believe it is necessary/desired to achieve that? (Input/Process)
10. What would you not include in the exhibits and programs of the future Museum of Economics? Why not? (Process/Product/Output/Outcome)
11. Is there anything you would like to add about the future Museum of Economics of Brazil? Any concerns or suggestions?

Thank you for your participation.

APPENDIX D: TABLE OF OBSERVATIONS

Museum	Source	Webpage	Day	Time
Citéco	Specialized magazine	https://coinsweekly.com/citeco-a-museum-dedicated-to-economy/	17/nov	
	Youtube tour	https://www.youtube.com/watch?v=iDhS3uC5Pgs	17/nov	00:01:23
	Youtube tour	https://www.youtube.com/watch?v=GXkzvhWLQSQ	17/nov	00:03:23
	Youtube tour	https://www.youtube.com/watch?v=cCu-Zc2gJGA	17/nov	00:02:50
	Youtube tour	https://www.youtube.com/watch?v=5AiPD59xv3M	17/nov	00:00:22
	Specialized magazine	https://magazine.bellesdemeures.com/en/luxury/lifestyle/citeco-city-economics-unique-museum-central-paris-article-33021.html	17/nov	00:03:00
	Journal	https://www.wsj.com/articles/vive-la-finance-a-chic-economics-museum-opens-in-paris-11565197331	17/nov	00:03:00
	Blog	https://blocnotesdeleco.banque-france.fr/en/blog-entry/citeco-first-european-museum-economic-education	17/nov	00:03:00
	Museum Website	https://www.citeco.fr/en	17/nov	00:53:00
	Youtube tour	https://www.citeco.fr/en/largo-winch-economic-pathfinder	17/nov	00:02:54
	Specialized magazine	https://phys.org/news/2019-06-art-money-paris-museum-economy.html	17/nov	00:03:00
	Specialized magazine	https://www.thejakartapost.com/life/2019/06/17/the-art-of-money-new-paris-museum-puts-economy-center-stage.html	17/nov	00:03:00
Specialized magazine	https://www.coinbooks.org/v22/esylum_v22n24a19.html	17/nov	00:03:00	
Total				01:21:52
MIDE	Specilized magazine	http://muzeydeneg.ru/eng/?p=593	18/nov	00:03:00
	Specilized magazine	https://www.plusesmas.com/ocio_fuera_de_casa/agenda/museo_interactivo_de_economia_(mide)_ciudad_de_mexico/1491.html	18/nov	00:03:00
	Organization/asociation	https://grupomccac.org/guia/mexico/museo-interactivo-de-economia/	18/nov	00:03:00
	General source	https://en.wikipedia.org/wiki/Interactive_Museum_of_Economics	18/nov	00:03:00
	Specilized magazine	https://www.jornada.com.mx/2006/07/11/index.php?section=sociedad&article=040n1soc	19/nov	00:03:00
	Youtube tour	https://www.youtube.com/watch?v=esm40wos42c	19/nov	00:06:05
	Site of museum	https://www.mide.org.mx/descubrelo-2/	19/nov	01:05:00
	Youtube tour	https://www.youtube.com/watch?v=vSaIXtbQIY	20/nov	00:01:56
Youtube tour	https://www.youtube.com/watch?v=1x709pIE_2E	20/nov	00:18:04	

	Youtube tour	https://www.youtube.com/watch?v=6vbGDUY3Yz8	20/nov	00:20:45
Total				03:31:42

(cont.)

	Site of museum	https://www.stlouisfed.org/inside-the-economy-museum/virtual-experience	20/nov	00:50:37
	Youtube tour	https://www.youtube.com/watch?v=REkjEpMj4AI	20/nov	00:01:00
	Youtube tour	https://www.youtube.com/watch?v=GhqZ-XgA6mM	20/nov	00:00:44
	Site of museum	https://www.stlouisfed.org/inside-the-economy-museum/virtual-experience	20/nov	00:00:43
Total				00:53:04

Museu de Valores	Site of museum	https://www.bcb.gov.br/acessoinformacao/museu/tourvirtual/	22/nov	00:29:00
	Youtube tour	https://www.youtube.com/watch?v=p7ekTv2zx6E	22/nov	00:26:00
	Youtube tour	https://www.youtube.com/watch?v=fd9DaRZbk4w	22/nov	00:07:29
	Youtube tour	https://www.youtube.com/watch?v=RLb_mk4ww24	22/nov	00:07:21
	Youtube tour	https://www.youtube.com/watch?v=2WO6B2u7-fM	22/nov	00:14:26
Total				01:24:16

APPENDIX E: OBSERVATION PROTOCOL

Name of Museum:

Date:

Beginning of Observation:

End of Observation:

Name of platform:

Features Observed	Analytic Memo (personal reflection, questions, decisions, inconsistencies and others)
Organization (experience outside the museum/facilitator/signage)	
Orientation (planning/support/guidance/SDL)	
Architecture (light/corridors/space/aesthetic/space for reflection/designated space for children/adults/physical disabilities/noise)	
Exhibition (pattern/display/chronology/labeling/texts/questions posed)	
Content (daily live/pure theoretical/history/financial concepts/leisure)	
Interactivity (hands-on/sound/smell/noise/response form visitor/images/touch/technology)	
If available: Audience (dialogue/family/prior knowledge/agenda/motivation/interaction/pace)	

APPENDIX F: LETTER OF INSTITUTIONAL SUPPORT

Letter of Institutional Support

I write on behalf of the research conducted by Juliana Mozachi Sandri as a research team member, Doctor of Education Candidate of the College of Education at the University of Illinois at Urbana-Champaign), and employee of the Banco Central do Brasil (BCB).

The study proposed, “Conducting a Needs Assessment to identify the Stakeholders’ Perspectives of the future Museum of Economics of Brazil about the main features that should be integrated in its exhibits and programs to promote Adult Learning” is neither part of Juliana Sandri’s practitioner role nor her duties as an employee of the BCB. She is completing her terminal degree on her own endeavor.

The future Museum of Economics of Brazil, managed by the BCB and object of the study proposed, is part of the BCB’s strategic Agenda. Therefore, the study will present important contributions to the future Museum. Because it has the potential to increase and improve the delivery of financial literacy to the adult visitors of the future Museum, which implementation is on course, the study is timely and welcomed.

The findings of the study may be used or not by the BCB and the research team members will not receive any compensation nor property rights in case of use. In the same sense, the research team members will not receive any kind of financial support to conduct the study. Support will be given by granting access to documents, people to be interviewed, and observation sites, as the as qualitative research instruments employed by the study.

The corporate documents to be used in the study are not confidential, however they must be anonymized when related to individuals. The use of any material from the BCB should follow the ethical rules and principles applied for all academic studies.

I believe that the study proposed will leave significant contributions to practice regarding central banks’ purpose of delivering financial literacy through money museums, as well as to the body of knowledge of Adult Learning in museums.

 09/13/2021

Date/Signature

Maurício Moura
Deputy Governor for Institutional Relations, Citizenship, and Conduct Supervision
Banco Central do Brasil

APPENDIX H: TABLE OF CODES

Codes, Categories, and Subcategories			Theoretical Framework*							Evidence from study
			OEM	AND	TL	EL	IL	CML	FL	
INPUTS			x							
INP.HR	Human resources		x							
INP.NHR	Human resources	Lack of adequate employees	x							
INP.HR.EMP	Human resources	Enough adequate employees	x							
INP.HR.NSKIL	Human resources	Skills	x							
INP.HR.SKIL	Human resources	Lack of skills	x							
INP.HR.TRA	Human resources	Training	x							
INP.FAC.CLN	Facilities	Cleanliness	x					x		x
INP.FAC.BTF	Facilities	Beautifulness	x					x		x
INP.FAC.BRO	Facilities	Broad space	x					x		x
INP.FAC.NBRO	Facilities	Not broad space, tight	x					x		x
INP.FAC.COMP	Facilities	Complete facilities (restaurants, garden, etc.)	x					x		x
INP.FAC.NCOMP	Facilities	Limited facilities	x					x		x
INP.FAC.OBS	Facilities	Obsolescence	x					x		x
INP.FAC.ATT	Facilities	Attractiveness	x					x		x
INP.FAC.UAT	Facilities	Unattractiveness	x					x		x
INP.FAC.INT	Facilities	Internet is available	x					x		x
INP.FAC.LUM	Facilities	Natural light, luminosity	x					x		
INP.FAC.NLUM	Facilities	Lack of luminosity, dark	x					x		
INP.FAC.ARTAPART	Facilities	Art and numismatic collections are apart						x		x
INP.NCONSERV	Lack of collection conservation									x
INP.ARCH.ACES	Architecture and accessibility		x							
INP.TIME	Time		x							
INP.NCLIM	Lack of adequate climatization		x							
INP.SEG	Security									x
INP.NSEG	Lack of security									x
INP.POL	Policies		x							
INP.LAW	Laws and regulations		x							
INP.MON.SELF	Money (financial resources)	Self-sustainable	x							
INP.MON.EFUN	Money (financial resources)	External funding	x							
INP.MON.PTN	Money (financial resources)	Partnership	x							
INP.MON.LWC	Money (financial resources)	Low Cost	x							
INP.MON.APART	Money (financial resources)	Museum independent, apart from BCB								x
INP.COMM	Good communication									x

(cont.)

INP.PKW	Prior knowledge			x	x	x		x	x	
PROCESSES			x							
PRC.CHD	Design for children			x						
PRC.ADL	Design for adults			x						
PRC.CAA	Design for children and adults apart			x						
PRC.SPEC.GRP	Design for specific sub-groups (elder, professions, like economists, etc.)			x						
PRC.MULTAP	Multiple approaches (texts, reading, hands-on, seeing, smelling, listening, etc.)						x	x		x
PRC.INT	Interactive					x	x	x		
PRC.INT.VIS	Interactive	Visual				x	x			
PRC.INT.AUD	Interactive	Audio				x	x			
PRC.INT.GAM	Interactive	Gamification				x	x			
PRC.INT.HND	Interactive	Hands-on				x	x			
PRC.NINT	Not interactive					x	x			
PRC.RLIF	Real life problem solving			x		x	x			x
PRC.SDL	SDL			x				x		
PRC.GUD	Guidance and orientation (clear)			x				x		
PRC.NGUD	Guidance and orientation (lack of/unclear/confusing)			x				x		
PRC.LNG.COL	Learning from others	Collaboration					x			
PRC.LNG.MED	Learning from others	Mediation					x			
PRC.TECH	Use of technology							x		
PRC.CHR	Defined chronology; progression in time in exhibits							x		
PRC.TMM	Teachable moment			x						x
PRC.RDC	Reflective Discourse					x				
PRC.LAB	Adequate signage/labeling							x		
PRC.NLAB	Lack of adequate signage							x		
PRC.LNG.SIMP	Language	Simple/easy								x
PRC.LNG.DEEP	Language	Deep								x
PRC.LNG.NDEEP	Language	Not deep/superficial								x
PRC.LNG.SUBT	Language	Subtle								x
PRC.LNG.EMP	Language	Empathic								x
PRC.LNG.TWO	Language	In two or more languages								x
PRC.CULT	Cultural Accessibility (different layers of society, diversity)							x		x
PRC.NEUT	Neutrality									x

(cont.)

PRC.CATI	Complimentary activities outside museum (media, website, program, app, manual, guide, etc.)						x	x	x		
PRC.NCATI	Lack of complimentary activities outside museum						x	x	x		
PRODUCTS			x								
PRD.RFC	Critical reflection					x	x	x		x	
PRD.CHG.LIF	Change of life perspective					x					
PRD.CHG.BHV	Change in behavior					x					
PRD.AWA	Awareness (the 'click', not deep learning)						x				
PRD.SURP	Surprise effect								x		
PRD.PLE	Pleasure/Entertainment/Fun			x							
PRD.UND.RBCB	Understanding of	Role of the BCB								x	
PRD.UND.RPEO	Understanding of	Role of people in the financial system								x	
PRD.UND.RGOV	Understanding of	Role of government in public budget									x
PRD.UND.SAVE	Understanding of	Importance of saving money								x	
PRD.UND.CRED	Understanding of	Importance of using credit wisely								x	
PRD.UND.BUDG	Understanding of	Importance of managing own/house budget								x	
PRD.EMO	Emotions						x	x			
PRD.EMO.RES	Emotions	Resilience/Overcoming/Hope (difficult times)					x	x			
PRD.EMO.SBEL	Emotions	Sense of belonging					x	x			
PRD.EMO.NSBEL	Emotions	Lack of sense of belonging					x	x			
PRD.VISAGA	Willingness to return										x
PRD.NVISAGA	Lack of willingness to return										x
PRD.AME	Impact of affective memory			x				x			
OUTPUTS			x								
OUP.FLIT	Financial Literacy									x	
OUP.SAT	Satisfaction										x
OUP.LEAR	Learning in general										
OUP.INFLU	Influence other people to visit the museum										
OUTCOMES			x								
OUM	Economic well-being of society										x

*

OEM: Organizational Elements Model

AND: Andragogy

TL: Transformative Learning

EL: Experiential Learning

IL: Informal Learning

CML: Contextual Model of Learning

FL: Financial Literacy

APPENDIX I: TABLE OF RESULTS: WHAT IS

Code WHAT IS	Record 2	Record 3	Record 5	Record 6	Record 9	Record 10	Document 2	Interview 1	Interview 3	Interview 4	Interview 8	Observation 4	TOTAL
INP.HR													0
INP.NHR							2					1	3
INP.HR.EMP													0
INP.HR.NSKIL							1					1	2
INP.HR.SKIL													0
INP.HR.TRA							1						1
INP.FAC.CLN													0
INP.FAC.BTF													0
INP.FAC.BRO													0
INP.FAC.NBRO							3					1	4
INP.FAC.COMP													0
INP.FAC.NCOMP							2					1	3
INP.FAC.OBS	1		1		1		2	1				1	7
INP.FAC.ATT													0
INP.FAC.UAT	1	1		1			1		1			1	6
INP.FAC.INT													0
INP.FAC.LUM													0
INP.FAC.NLUM				1			1					2	4
INP.FAC.ARTAPART							2					1	3
INP.NCONSERV							2					1	3
INP.ARCH.ACES							4						4
INP.TIME													0
INP.NCLIM							1						1
INP.SEG													0
INP.NSEG							1						1
INP.POL													0
INP.LAW													0
INP.MON.SELF													0
INP.MON.EFUN													0
INP.MON.PTN													0
INP.MON.LWC													0
INP.MON.APART													0
INP.COMM													0
INP.NCOMM							3				1	1	5
INP.CON.HISTMON							1	1				2	4
INP.CON.PAY							1						1
INP.CON.GOLD							1					1	2
INP.CON.FUT													0
INP.CON.PST	1				1		1					1	4

(cont.)

INP.CON.PRE												1	1
INP.CON.HISTR												2	2
INP.CON.NART													0
INP.CON.ART							1					1	2
INP.CON.ECN													0
INP.CON.INFWLD													0
INP.CON.INFBRZ												1	1
INP.CON.BKG													0
INP.CON.INS													0
INP.CON.RET													0
INP.CON.SUST													0
INP.CON.NSUST							1					1	2
INP.CON.MONPOL													0
INP.CON.FINSTA													0
INP.CON.INTER													0
INP.CON.TRA													0
INP.CON.TAX													0
INP.CON.COST													0
INP.CON.MULT													0
INP.CON.STA													0
INP.PLA			1				2						3
INP.PLA.TEMP													0
INP.PLA.NTEMP							1						1
INP.INFO.AUD													0
INP.NINFO.AUD							1						1
INP.HIS			1									1	2
INP.RLRN													0
INP.VAL.QUA													0
INP.IMOT													0
INP.LMOT													0
INP.PEX													0
INP.PKW													0
PRC.CHD												1	1
PRC.ADL													0
PRC.CAA													0
PRC.SPEC.GRP													0
PRC.MULTAP													0
PRC.INT													0
PRC.INT.VIS												1	1
PRC.INT.AUD													0
PRC.INT.GAM													0
PRC.INT.HND													0
PRC.NINT				1		2	1					2	6
PRC.RLIF													0
PRC.SDL							2						2
PRC.GUD													0

(cont.)

PRC.NGUD						1				1	2	1	5
PRC.LNG.COL													0
PRC.LNG.MED													0
PRC.TECH													0
PRC.CHR							1						1
PRC.TMM													0
PRC.RDC													0
PRC.LAB													0
PRC.NLAB							3				2		5
PRC.LNG.SIMP													0
PRC.LNG.DEEP											1		1
PRC.LNG.NDEEP													0
PRC.LNG.SUBT													0
PRC.LNG.EMP													0
PRC.LNG.TWO													0
PRC.CULT													0
PRC.NEUT													0
PRC.CATI													0
PRC.NCATI							3				2		5
PRD.RFC													0
PRD.CHG.LIF													0
PRD.CHG.BHV													0
PRD.AWA										1			1
PRD.SURP													0
PRD.PLE													0
PRD.UND.RBCB													0
PRD.UND.RPEO													0
PRD.UND.RGOV													0
PRD.UND.SAVE													0
PRD.UND.CRED													0
PRD.UND.BUDG													0
PRD.EMO													0
PRD.EMO.RES													0
PRD.EMO.SBEL													0
PRD.EMO.NSBEL										1			1
PRD.VISAGA													0
PRD.NVISAGA							2						2
PRD.AME													0
OUP.FLIT													0
OUP.SAT													0
OUP.LEAR													0
OUP.INFLU													0
OUM							1						1
Total	3	1	1	3	2	3	49	1	1	3	5	31	105

APPENDIX J: TABLE OF RESULTS: WHAT SHOULD BE

Code WHAT SHOULD BE	Record 1	Record 2	Record 3	Record 4	Record 5	Record 6	Record 7	Record 8	Record 9	Record 10	Record 11	Record 12	Record 13	Record 14	Document 1	Document 2	Interview 1	Interview 2	Interview 3	Interview 4	Interview 5	Interview 6	Interview 7	Interview 8	Observation 1	Observation 2	Observation 3	TOTAL	
INP.HR															1									1				2	
INP.NHR																													0
INP.HR.EMP						1		1	1							1					1							5	
INP.HR.NSKIL																												0	
INP.HR.SKIL																1												1	
INP.HR.TRA																3												3	
INP.FAC.CLN	1																											1	
INP.FAC.BTF	1																									2		3	
INP.FAC.BRO		2				2																			1	1		6	
INP.FAX.NBRO																												0	
INP.FAC.COMP				1	1											1									1	1		5	
INP.FAC.NCOMP																											1	1	
INP.FAC.OBS																												0	
INP.FAC.ATT			1	1								1									1							4	
INP.FAC.UAT																												0	
INP.FAC.INT				1				1																				2	
INP.FAC.LUM																									1			1	
INP.FAC.NLUM																											1	1	
INP.FAC.ARTAPART																												0	
INP.NCONSERV																												0	
INP.ARCH.ACES																1									3			4	
INP.TIME																												0	
INP.NCLIM																												0	
INP.SEG																2												2	
INP.NSEG																												0	
INP.POL																1												1	
INP.LAW																1												1	
INP.MON.SELF		1							2							3									2			8	
INP.MON.EFUN	1															1									1			3	
INP.MON.PTN	1	2													1	5									1	3		13	
INP.MON.LWC								1	1											2								4	
INP.MON.APART		2							1							2												5	
INP.COMM																2				2						1		5	
INP.NCOMM																												0	
INP.CON.HISTMON	2	1		2	2				1	1		1				1	2	1					1		4	3	2	24	
INP.CON.PAY	1															1		1							1	1	1	6	
INP.CON.GOLD																							1			2		3	
INP.CON.FUT	1	2		3				1	2					1	1	1							2		3			17	
INP.CON.PST			1	1					1					1														4	
INP.CON.PRE		2	1	1					1					1														6	

