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### LIFELONG LEARNING CLIMATE MONITORING AND THE ECOLOGICAL GOVERNANCE AIDED BY BIG DATA

Academic paper

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#### Abstract text:

##### 1.Purpose

Learning is the existence of human being. Learning is integrated with life and working aided by new media and big data. The open access of knowledge, the ubiquitous learning makes learning more flexible. In order to make a positive use of high technology to improve human's learning efficacy and well being, to promote active and constructive citizenship and promote employability, to reduce educational divisions and promote equality and grow, it's necessary to construct a lifelong learning ecology.

##### 2.Originality and value

2.1 Construct a lifelong learning monitoring index based on theoretical study and empirical analysis. On the basis of theoretical and empirical research, this paper constructs a lifelong learning monitoring index system and selects and sorts the indexes at different levels: individual--knowledge, ability, emotion, resilience, output and learning participation; Environmental conditions-- resource openness and access; investment, training, information technology, cultural environment; national and regional strategic planning and system of lifelong learning, with different weights. Using CIPP model (scenario-input-process-output) to enhance monitoring evaluation and dynamic improvement. Each indicator point is weighted differently based on correlation analysis, factor analysis, and analytic hierarchy process, and is associated with action plans, achievement levels, and continuous improvement of monitoring data.

##### 2.2 To build a lifelong learning ecological culture circle

To give full play to the power of grass-roots organizations, in which learning-life-work reinforce each other; Ecological cultural circle of individual-group-technology-environment are positively adaptive with each other. Everyone is both a learner and a contributor.

##### 2.3 Construct a life long learning ecological chain from learning to value.

To improving the supply chain of quality resources for lifelong learning.To promote the learning ecosystem using monitoring index aided by big data; Monitor the global situation of new technologies, learning resources and capital flows, positioning the opportunities and threats and offer in-time consultant.

##### 3.Design and methodology

##### 3.1 Design and framework

The research framework is as follow:

Fig.1. The framework of lifelong learning ecosystem study and construction

##### 3.2 Methodology

##### 3.2.1 Bibliometrics

Fig.2. Lifelong learning study trend

Bibliometric study(2020-11-15, data from WOS) shows that the first study on lifelong learning appeared in 1965, and till 2010 reached the hottest. The keywords include: Lifelong Learning, Access to Education, Adult Learning, Education Work Relationship, Employment Patterns, Employment Qualifications, Equality, Inclusive, Human Capital,Needs Assessment, Open Education, Ubiquitous Learning, Smart learning,etc.The research on lifelong learning includes concepts, economic repaid, influencing factors, policies and laws, information technology and learning ecology, smart architecture, inclusive learning, etc. The themes are related to politics, economy, culture, the trend of reciprocal of science and technology is a sign of the progress of human society.

### 3.2.2 Questionnaire

The author constructs a framework for questionnaire from three dimensions:psychological, physical,social; individual, group, and society; human,architecture and policy. The content includes:participation time spent in education and training;the purpose, the source of financial support (public, employer, self) ,perceived benefits (job-related, societal, personal), perceived demand (needs and interests),perceived motives (job-related, societal, personal), perceived obstacles to participation,transparency of learning offer (information and advice).Self reported digital literacy, foreign language skills.Background variables includes: Individuals: age, sex, educational attainment, field of education and training, labour market/employment status, current/last job,nationality/citizenship/main residence, income(individual and family), size of institution, a typology of obstacles to learning and a typology of expected outcomes (job-related, societal and personal). The participants are inclusive:educationally and socially disadvantaged persons, young people , adult and the retired,etc).Then designs three questionnaires and use both online and offline. Big data mining and analysis were conducted on online learning satisfaction, mental health and learning efficacy of primary and secondary school students and college students before and after the "epidemic".

### 4.Results and findings

4.1 The index factors are similar without structure or value allocation based on quantitative and qualitative research.

4.2 The lack of bi-driver model of“top-down” and “bottom-up”

4.3. The lack of connection between formal education and lifelong learning.

### 5.Limitations and implications

The smart construction is lack of financial support.Some suggestions are put forward: Firstly, to construct the life long learning ecological model integrating the up-down and bottom-up models, and to enhance the learning chain from learning to value; Secondly, to construct the lifelong learning ecological culture circle and improve the learning climate; Thirdly, to integrate formal education with lifelong learning and highlight the "learning power" for all augmented by smart environment. (see figure3.)

The measures include: (1) Improve the ability of all learners to use new medial and knowledge base for active self learning.(1) Construct multiple learning community with teachers, students, clerks, workers, farmers, engineers, scientists and coordinators.(3) Evaluate the offer educational services and products and their market value (content development, guidance services,educational material production etc).

Fig 3. life long learning monitoring ecological model

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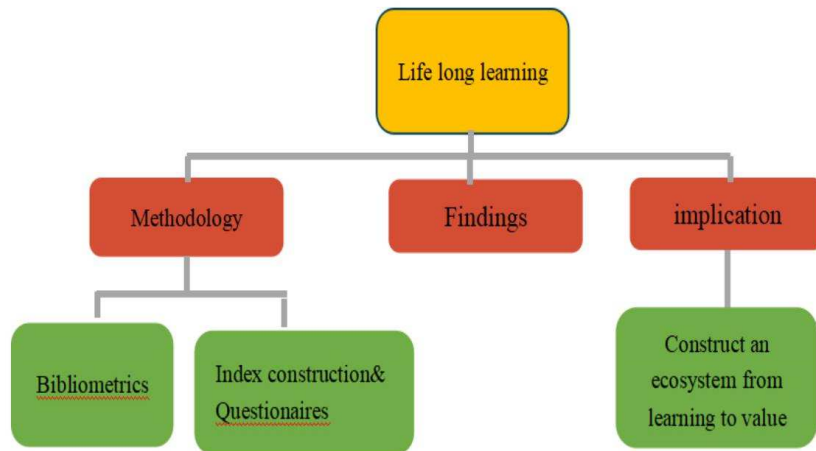


Fig.1. The framework of lifelong learning ecosystem study and construction



Fig.2. Lifelong learning study trend

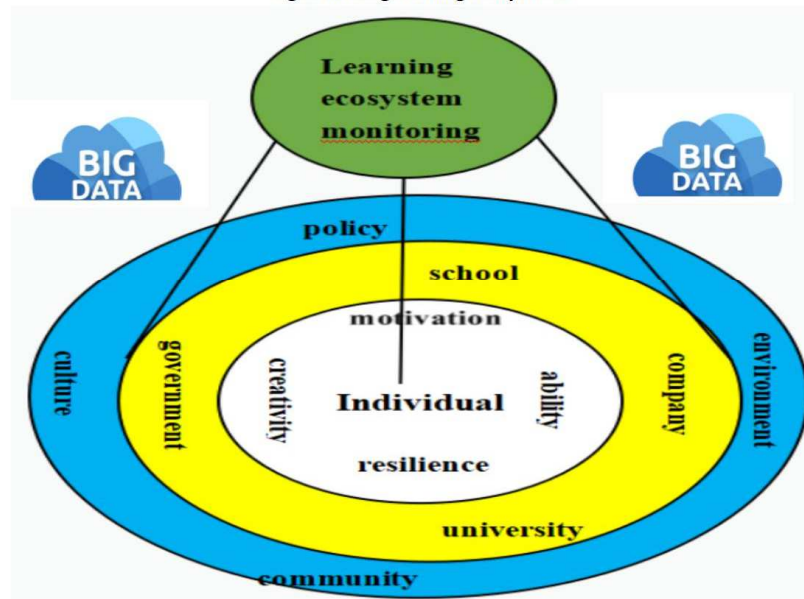


Fig 3. life long learning monitoring ecological model



“DESIGNING GLOBALLY CONNECTED REGIONAL INNOVATION ECOSYSTEMS: OVERCOMING BARRIERS AND OPENING PATHWAYS” **Errore. Il segnalibro non è definito.**

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