



Research Center for Learning and Performance Technology

北京师范大学 · 学习与绩效技术研究中心

Learner Analysis: What, When & How



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Cooperaters

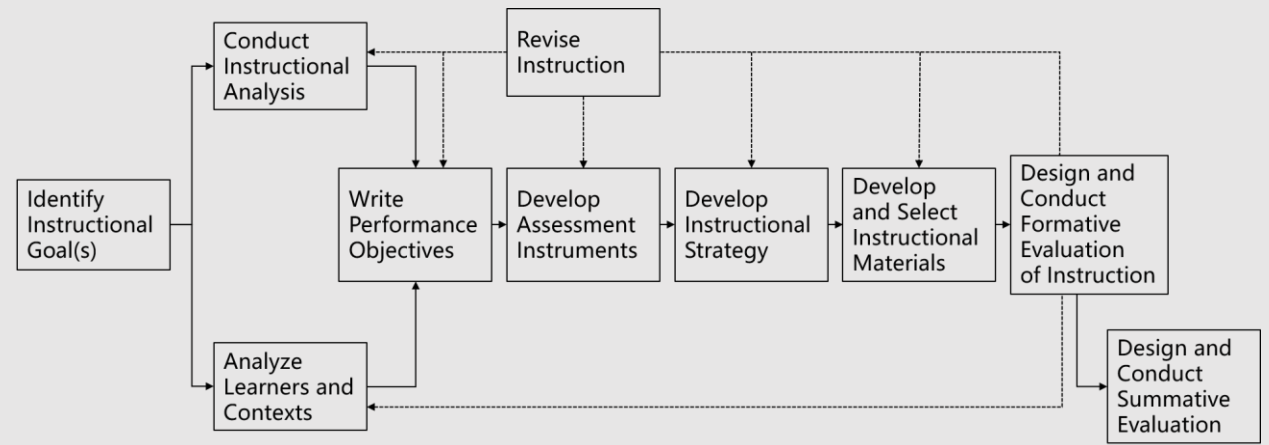
Jing, Li (2012). A Study on Learner Analysis--Take Primary School English as an example (Master Degree Thesis)

Zhimin, Chen (2014). Developing Template of Learner Analysis --Take Primary School English as an example (Master Degree Thesis)

李静．学习者分析研究——以小学英语为例[D]．北京师范大学，2012．

陈智敏．学习者分析模板的编制——以小学英语为例[D]．北京师范大学，2014．

Research Background



Dick, W., Carey, L., Carey, J.O. The Systematic Design of Instruction (7th Edition) [M]. New York: Pearson, 2008.

Situation in the mainland China:

- It is educational technology professionals who get hold of the theories and methods of Instructional Design rather than subject teachers.
 - To help teachers prepare their teaching plan according to this model
 - To track the development of each stage in this model and combine the study with subject classroom instruction





Contents

1

What: Framework of Learners' Characteristics

2

When: Learner Analysis at Different Levels

3

How: Work Flow of Learner Analysis



What: Framework of Learners' Characteristics

The Process of Building the Framework of Learners' Characteristics



**Determine the classification
dimensions of learners'
characteristics**

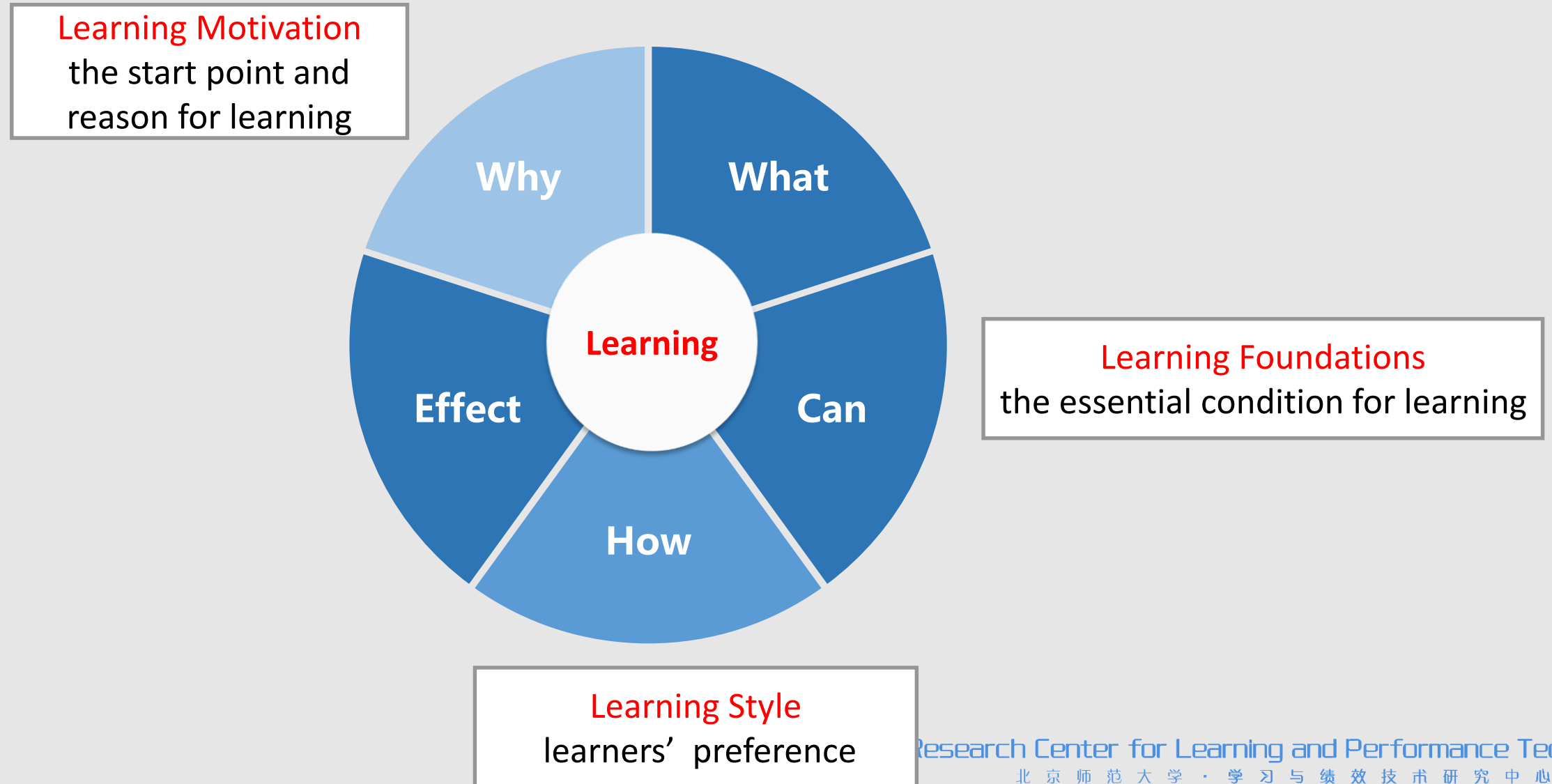
✓ To cover all the characteristics



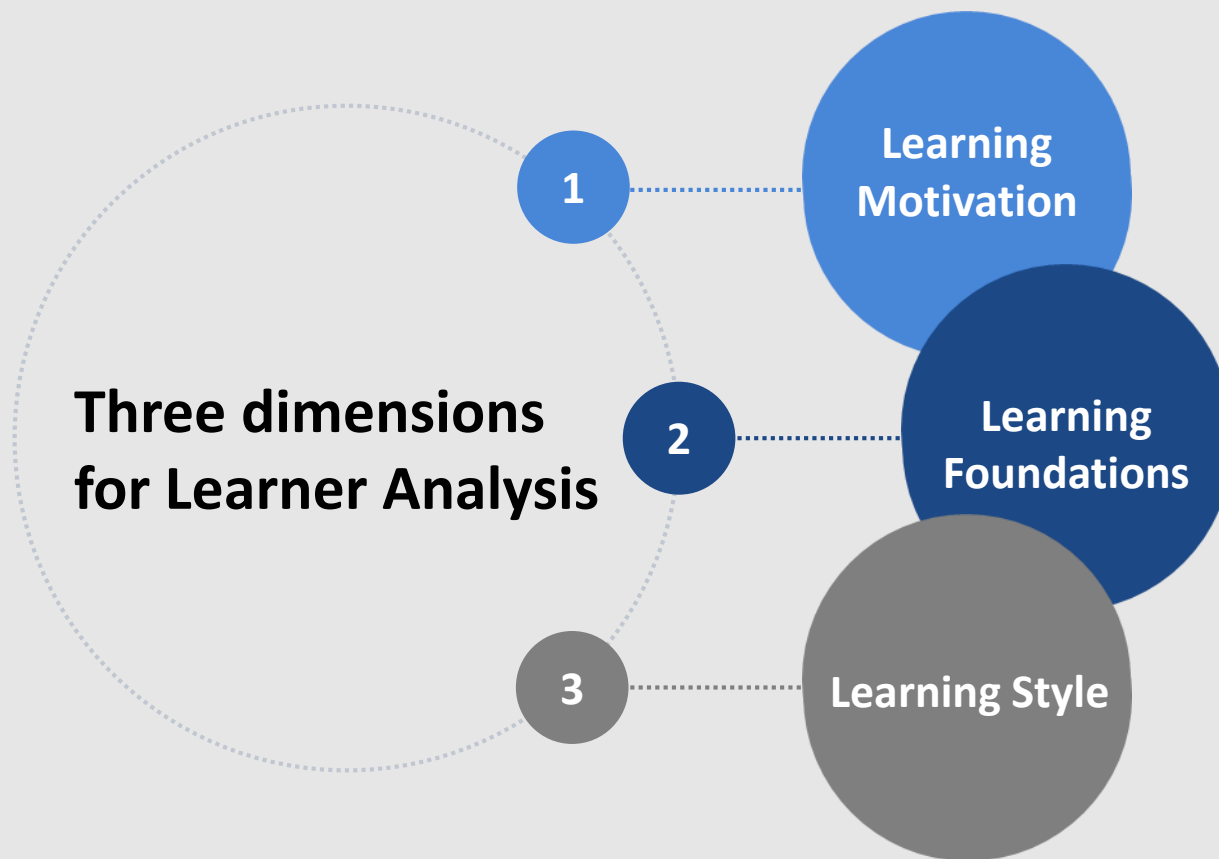
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Determine the Classification Dimensions of Learners' Characteristics



The Classification Dimensions of Learners' Characteristics



The Process of Building the Framework of Learners' Characteristics



————→ **Identify the subclasses
of each dimension**

- ✓ To decompose each dimension in order to find specific characteristics
- ✓ Literature research method



**Determine the classification
dimension of learners'
characteristics**

- ✓ To cover all the characteristics



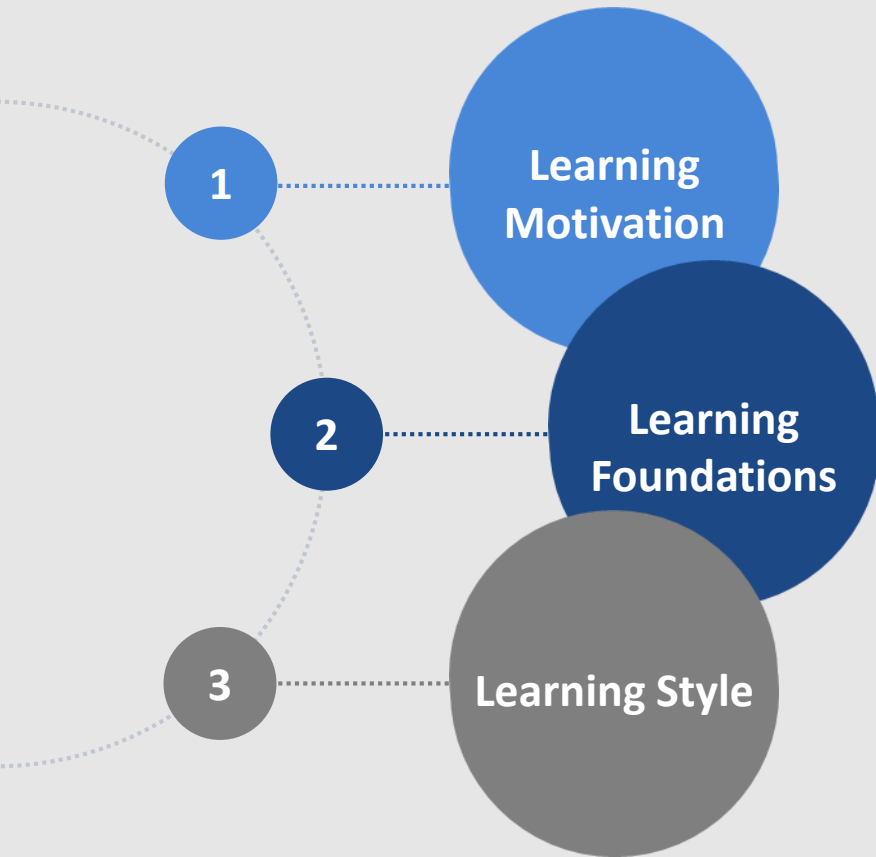
Identify the Subclasses of Each Dimension Based on Existing Framework

	Researcher	Framework of Learners' Characteristics
Abroad	R. M. Gagne (1992)	The nature of learner qualities, qualities that are learned, abilities and traits
	P. L. Smith & T. J .Regan (2008)	Stable similarities among learners, Stable differences among learners, changing differences between learners, changing similarities between learners
	Dick, W & Carey, L (2007)	entry behaviors, prior knowledge of topic area, attitudes towards content and potential delivery system, academic motivation (ARCS), educational and ability levels, general learning preferences, attitudes towards training organization, group characteristics
	J. E. Kemp (1985)	academic information, personal and social characteristics, Learning styles
	The American Psychological Association	cognitive and metacognitive, motivational and affective, developmental and social, and individual difference factors
China	Ji Yun Zeng (2006)	basis system, motivation system, operation system, orientation system
	Long Li (2010)	general characteristics, entry skills, information literacy
	Kaicheng Yang (2004)	Learning style, intelligence level, locus of control, anxiety level, learning speed, entry skills, aptitude, locus of emotion, learning motivation, basic conception, the character of attitude, the character of emotion, the character of volition
	Guodong Hua (2009)	inter-individual difference and intra-individual difference
	Longsheng Chen (2009)	Start point of learning, learning state, learning result
	Kai Din (2009)	The pre-teaching condition of each student, the potential condition of each student, the condition of difference of students in groups

01 Reexamine each framework of Learners' Characteristics according to the dimensions, justify the rationality of each element

02 Including all the characteristics affecting not only at lesson level but also unit and course level

Identify the Subclasses of Each Dimension



Classification Dimensions	Subclasses of Each Dimension
Learning Motivation	Expectation
	Values
	Emotion
Learning Foundations	Social Foundations
	Physical and Mental Foundations
	Entry skills
Learning Style	Physiological factors
	Psychological factors
	Social factors

Identify the Detailed Characteristics based on the Existing Research

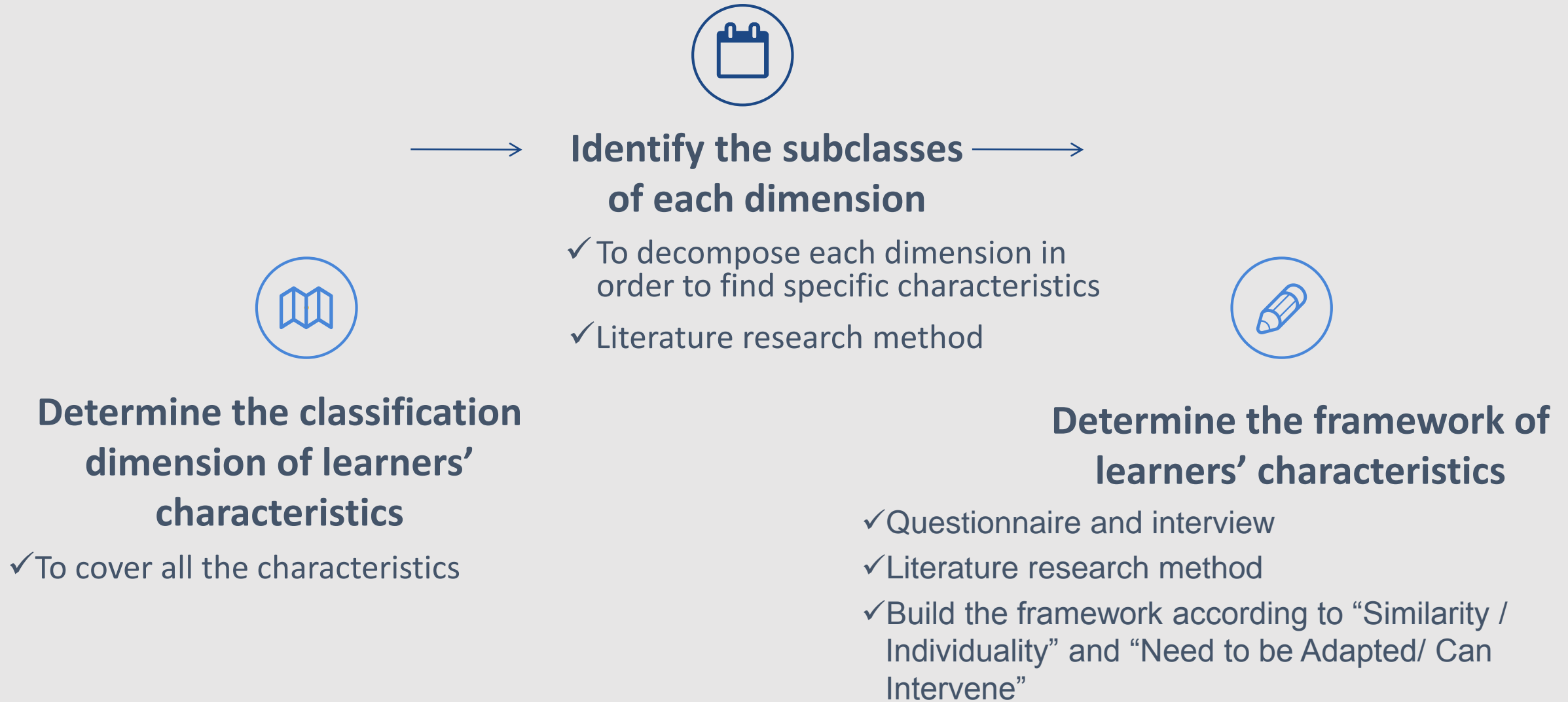
Author	Year	Important Learners' Characteristics
邵瑞珍	1990	Achievement motive, interest, general ability, multi-intelligence, cognitive style, personality and disposition, gender
林崇德	1992	age characteristics (stages of cognitive development) , general ability, multi-intelligence, interest, personality and disposition, learning habit, cognitive style
王丽娟 , 张亿钧 , 李少斌	2003	entry skills, life experience, attitude to the teacher and learning activities
Heinich , R	2004	gender, age characteristics, life experience, economical, cultural and social background, general ability, multi-intelligence, attitude to the teacher and learning activities, learning preference, learning style
陈晓慧	2005	age characteristics (stages of cognitive development) , learning style, entry skills
谢利民	2005	age characteristics (stages of cognitive development) , achievement motive, learning style
Ormrod , J . E	2005	general ability, multi-intelligence, achievement motive, creativity
郭成	2006	general ability, cognitive style, entry skills
Dick , W	2007	entry skills, attitude to the teacher and learning activities, learning motivation, economical, cultural and social background, general ability,

Identify the Detailed Character

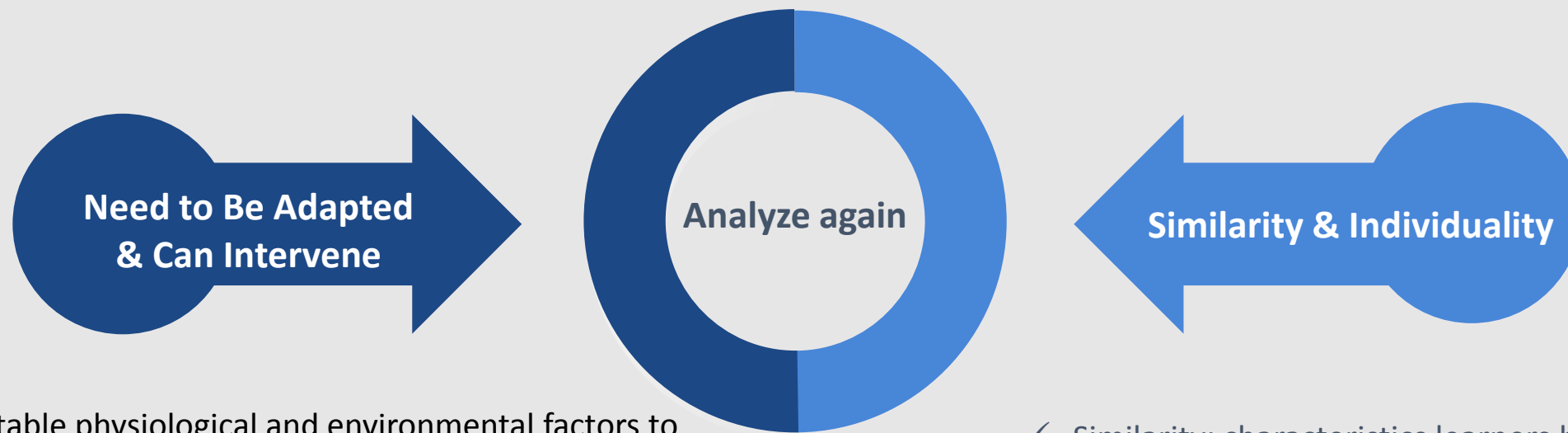
- Questionnaire and interview
- Literature research methods

Classification Dimensions	Subclasses	Detailed Characteristics
Learning Motivation	Expectation	learning goal and aspiration
		self-efficacy
		attribution
	Values	interest
		achievement motive
	Emotion	attitude towards the teacher and learning activities
		personality and temperament
		anxiety
Learning Foundations	Social Foundations	economical, cultural and social background
		family information
		life experience
	Physical and Mental Foundations	gender
		age characteristics
		special psychosomatic condition
	Entry skills	entry skills
		general ability
		multi-intelligence
		learning habit
Learning Style	Physiological factors	learning environment preference
		optical time preference
		sensory perception preference
	Psychological factors	learning strategy
		cognitive style
	Social factors	be independent or with others for learning
		a sense of competition and cooperation

The Process of Building the Framework of Learners' Characteristics



Determine the Final Framework of Learners' Characteristics



- ✓ Adapted: Stable physiological and environmental factors to which **teaching need to be adapted**
- ✓ Intervene: changeable psychological and emotional factors and characteristics influenced by learning process and result, with which **teaching can intervene**
- ✓ Adapted & Intervene: some positive changes can happen after a long-term instructional intervention, to which **teaching need to be first adapted and then lead to change bit by bit**

- ✓ Similarity: characteristics learners have in common.
- ✓ Individuality: differences among learners



The Final Framework of Learners' Characteristics

	Teaching need to be adapted	Teaching can intervene
Similarity	age characteristics、 gender	attitude to the teacher and learning activities of the whole class
	entry skills of the whole class	
Individuality	family information	attitude towards the teacher and learning activities for individual
	economical, cultural and social background	Learning goal and aspiration
	life experience	Self-efficacy
	cognitive style	attribution
	sensory perception preference	personality
	Optical time preference	A sense of competition and cooperation
	Learning environment preference	
	temperament	
	special psychosomatic condition	
	entry skills, interest, learning habit, anxiety, learning strategy, multi-intelligence, general ability of individual	





When: Learner Analysis at Different Levels



Learner Analysis at Different Levels

Different Levels	Elements
Course	achievement motive, attitude to the teacher and learning activities, age characteristics (stages of cognitive development) , multi-intelligence, cognitive style, goal and aspiration for learning, self-efficacy, attribution, personality and disposition, anxiety, economical, cultural and social background, family information, gender, special psychosomatic condition, learning habit, optical time preference, sensory perception preference, a sense of competition and cooperation
Unit	entry skills, life experience, learning strategy
Lesson	interest, entry skills, general ability, learning environment preference

- Similar and/or stable characteristics of the learner should be analyzed at Course Level
- Unit entry ability and unit topic related experience should be analyzed at Unit Level
- Unstable individual learners' differences should be analyzed at Lesson Level

3

How: Flow of Analysis at Different Levels



Course Level: Learner Analysis Process Design

Course Level: Task-based

Task Analysis

Goal	Learning content	Discipline characteristics
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Identify learners' characteristics

Entry Skills	Learning habit
age characteristics	cognitive style	

Course Level: Problem-based

Identify students' problem

Students' problem	Students' gap	Potentials
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Forecast possible causes

Forecast causes	Predict development direction
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Select tools and methods

Similarities

- Document research
- Interviews with relevant teachers and students

Differences

- Measure by related scale
- Interview with relevant teachers and students
- Home visit
- Quizzes,

Result analysis

- What prerequisites do students master?
- How about the learners' age characteristics? In terms of the specific class, are there any special situation?
- Do students like this course?
- What kind of problems are students facing with?
-

Take measures and strategies

Measures in terms of students

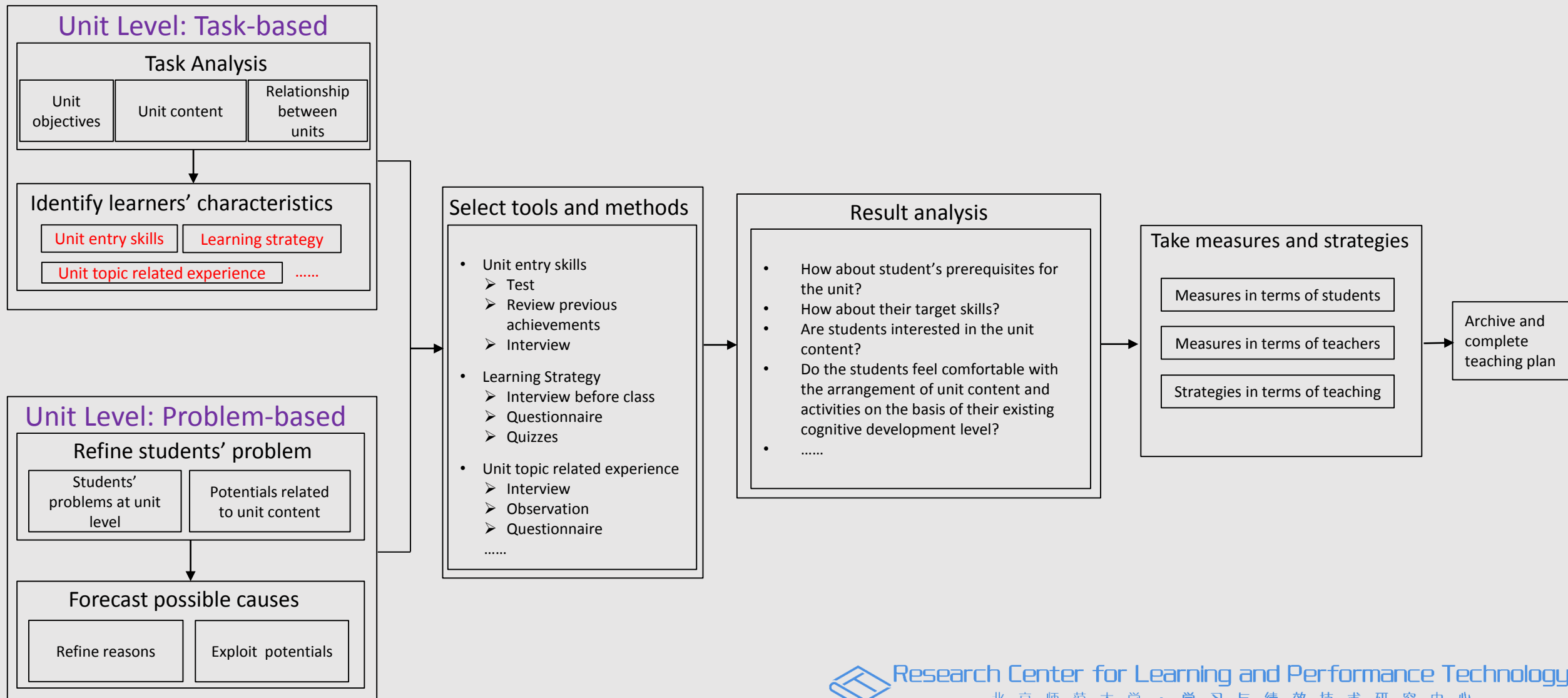
Measures in terms of teachers

Strategies in terms of teaching

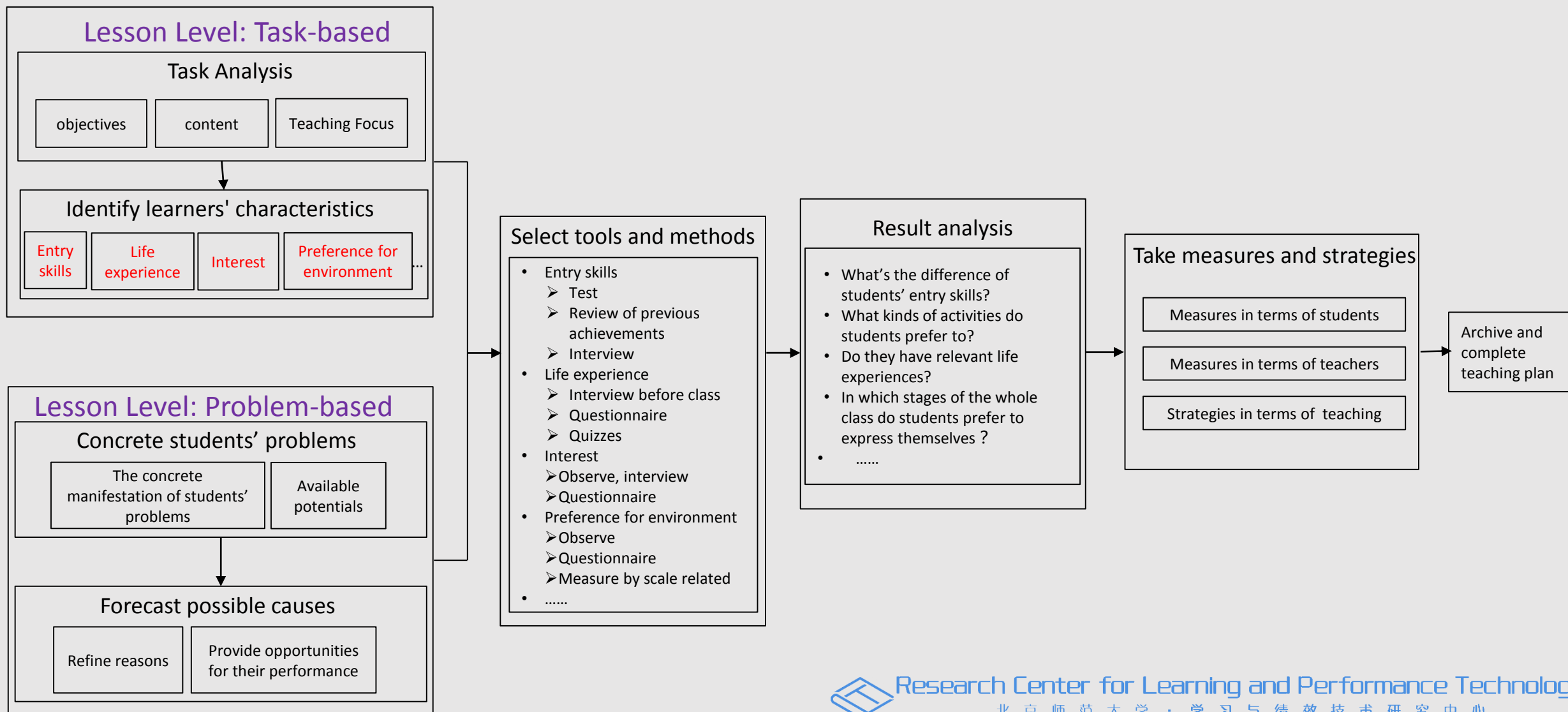
Archive and complete teaching plan



Unit Level: Learner Analysis Process Design



Lesson Level: Learner Analysis Process Design



Discuss & Future Research

- Not all the elements are equally important in terms of different subjects
- Not all the subject teachers are equally capable of mastering instructional design
 - The research results of Learners' analysis still need to be applied into different subjects
 - Electronic Performance Support Systems should be developed for teachers
 - Delphi Approach: to confirm the framework of learner analysis; different levels of learners' characteristics
 - Design-base approach: to polish the workflow of learner analysis at different levels
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Contents

1

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2

When: Learner Analysis at Different Levels

3

How: Work Flow of Learner Analysis

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Thank you



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