



## Documentational approach to didactics The multilingual project

*Translating Issues Report, concerning both the translator and the reviewer*

*Language: Chineses*

*Translator: Chongyang Wang*

*Reviewer: Binyan Xu*

*Main source: English version*

*Date: September 2020*

1. In a few lines, could you describe the main issues that emerged when translating the DAD entry into Chinese? What were the issues emerging during your interactions with the reviewer?

- The proper term of document and documentation, which in Chinese is much smaller than resource. But the meaning of resource(资源), which refers to the support or base for resourcing new activities, in the ancient Chinese (seen from the dictionary), we share the similar idea and meaning spectrum.
- If adding an extra explanation between re-source in English/French and 资源 in Chinese, we could find some common ideas on the broad definition of resource. (in section 2, after the paragraph of Adler).
- The proper term of didactics and pedagogy, 教学法, 教学论, due to the mis-translation of didactics, or the American pedagogy, and European didactics, are not clearly used in Chinese. We decided to use 教学论 didactics, which is larger than approach, and smaller than pedagogy.
- The translation terms of milieu, as well as the work of Brousseau in Chinese. Contextual? Situational? In China, the translation work of Brousseau (theory of didactical situation) is blanc.
- The lack of translation work of Vergnaud, which provide us more flexibility, and difficulty to choose the terms, such as scheme, operational invariant in Chinese.
- The potential Chinese references for understanding what is scheme of Piaget (3 papers about how scheme theory was introduced and applied in Chinese, what are its differences with Kunt and the modern recognition psychology, and what is scheme for Piaget):
- Some special local expressions, like “lesson cycle” in part of “Window 1”, worth to be introduced with local background informations.
- The introduction of Sesamath resources in French, is it necessary to explain the meaning of the French resources’ names? For example, mathenpoche=math in pocket=口袋里的数学.

2. For the following words / expressions (table below),

- Did you find easily an equivalent word in your language? In this case, could you give, in English, a definition of this equivalent word? (Case A)
- If you hesitated between different translations (or disagreed between translator and reviewer), which were the possible choices (each one associated with/related to which definition?), and what was the motivation of your final choice? (Case B)
- If it was impossible to find a relevant translation, what did you do (e.g. leaving the English name, or giving a complementary explanation in a footnote)? (Case C)

Possible translations, and associated definitions (in English)	<p>The word designing the concept of <b>resource</b></p> <p>There is no difficulty when translating either English resource or French ressource in to Chinese “resource”, because the Chinese character 资料 shares exactly same idea of Adler’s “re-source” (see more explanation 资源 in No. 1 below). I also put another two expressions, just to show the different oral expressions often used by teachers. The Chinese resource usually refers to something more abstract and more comprehensive, but the following two (No.2 资料 and No.3 材料) are closer to the material aspect when teachers say them in the interview.</p> <p>(1) 资源: it can be used either abstract or material aspect, formal and huge context, like human resource, mining resource, the resource on earth, the online resource etc.</p> <p>(2) 资料: more material aspect, can be used formally, such as the tools or machines to produce something in the factory; or be used in exam or school context, such as the document for review or for preparing the exams. When teachers talk about 资料, it often refers to some paper materials, something accompany and complete the textbooks.</p> <p>(3) 材料: more material aspect, closer to document, such as the list of papers/documents when applying something; the booklets to be learnt when attending the conferences or training etc.</p>
Final choice, and motivation	<p>The first character 资 contains two parts, 次 on the top, meaning location, 贝 on the bottom referring money (or something could sponsoring), so 资 contains the meaning of “location of money”.</p> <p>The second character 源 contains a left part 氵, which means water, and a right part 原 referring origin, so 源 means the origin of the water.</p> <p>The two characters form a Chinese word “资源”, the origin of supports.</p> <p>It is still a noun, not a verb like re-sourcing. But it maintains the potential nature that the “资源” can re-source other things or people or activities.</p> <div data-bbox="497 1518 849 1662" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"> <span style="font-size: 1.2em;">资源</span>  <span style="font-size: 0.8em;">(zī yuán)</span>  <span style="font-size: 0.8em;">Re-source</span> </p> <p style="text-align: center;"> <span style="font-size: 0.8em;">“次” (location)</span>  <span style="font-size: 0.8em;">“贝” (money)</span>  <span style="font-size: 0.8em;">“氵” + “原”</span>  <span style="font-size: 0.8em;">(water) (origin)</span> </p> </div>
Scientific references using this word in the targeted language	<p>Ci Yuan (1983). The Commercial Press. (An ancient Chinese dictionary)          辞源. 北京: 商务印书馆, 1983.</p>

Possible translations, and associated definitions (in English)	<p>The word designing the concept of <b>document</b></p> <p>It is difficult to choose a term exactly equals the series French terms like “document, documentation, documentational”.</p> <p>Taking document as the first:</p>
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	<p>(1) 文献, any carrier that records knowledge<sup>1</sup>, and the form of the carrier could be in papers, or on bamboos, or in videos or audios on benefiting from the development of technology and internet<sup>2</sup>.</p> <p>(2) 文档, more widely used in modern Chinese, especially in IT field, the text file saved by the computer</p>
Final choice, and motivation	<p>I checked the dictionaries of French, English and ancient Chinese. Finally choose 文献. Two reasons below:</p> <ul style="list-style-type: none"> <li>● 文献 is not an oral words used by everyone, but more in academic field, referring to the papers, articles or books as references. For example, in an academic paper, we have the final part “参考文献(documents for references)”, corresponding to References in English papers, or bibliographie in French papers. A trained researcher or future researcher, when making literature review, we will <b>look for, check and read the documents (查阅文献)</b>.</li> <li>● In the field of library<sup>3</sup> and information<sup>4</sup>, document is widely recognized as 文献. Even in general,文献 refers more as papers or articles or books (either in paper or in digital form), it is also possible to be the text/CD/photos/videos with information</li> </ul>
Scientific references using this word in the targeted language	<p>(1) The national standard of People’s Republic of China : Information and documentation——Rules for bibliographic references and citations to information resources.(Edition1983). 中华人民共和国国家标准文献著录总则(1983年版).</p> <p>(2) Zheng, G. (1998). The concept, character and management of digital documents. <i>Shanxi Documents</i>, 2:16-18. (In Chinese)郑耕博. 电子文件资料的概念·特点·管理[J]. 陕西档案, 1998 (2): P16-18.</p> <p>(3) Gao, L. (2008). The development of ancient Chinese documents and modern document science. <i>Libraries in New century</i>, (5): 46-48. (In Chinese)高利华. 试论中国古典文献学与现代文献学的发展[J]. 新世纪图书馆, 2008 (5): P46-48.</p> <p>(4) Wang, Y. (2008). The development of Western document studies. <i>Library forum</i>, (4): 53-55. (In Chinese)王玉婷. 20世纪西方文献学发展历程探析[J]. 图书馆论坛, 2008 (28), 4: P53-55.</p>

	<p>The word designing the concept of <b>documentation</b></p>
Possible translations, and associated definitions (in English)	<p>“Document” in DAD refers only as a noun, while “documentation” is more complex since it comes with documentation work. I have to find a Chinese word contains both a verb meaning and a noun.</p> <p>Fortunately, some Chinese references argued that documentation could be translated as 文献(document)工作(work), which refers to the work of collecting, storing, classifying and searching, transmitting and using any information<sup>5</sup>. And documentation is more than collecting documents for some special aims, but also the continuous, systematical integrating and working on the information, for the aim of collecting, searching for, transmitting and using<sup>6</sup>.</p> <p>I need to make a word group in the form of “document + **”, namely the noun aspect + the verb aspect, and the options of verb**, there are two:</p>

<sup>1</sup> In Chinese “记录有知识的一切载体”, cited from 中华人民共和国国家标准文献著录总则 (1983年版) (The national standard of People’s Republic of China : Information and documentation——Rules for bibliographic references and citations to information resources.) (<http://www.gs.fudan.edu.cn/upload/article/files/e2/3e/0197d0d64cbea9d9fae9a668329f/b9a3a4c2-1e6f-4e81-9974-36eb01635471.pdf>)

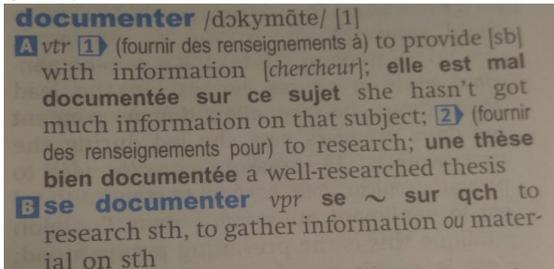
<sup>2</sup>郑耕博. 电子文件资料的概念·特点·管理[J]. 陕西档案, 1998 (2): P16-18.

<sup>3</sup>高利华. 试论中国古典文献学与现代文献学的发展[J]. 新世纪图书馆, 2008 (5): P46-48.

<sup>4</sup>王玉婷. 20世纪西方文献学发展历程探析[J]. 图书馆论坛, 2008 (28), 4: P53-55.

<sup>5</sup>柯平. 西方“文献工作”一词含义的演变[J]. 情报学刊, 1986 (6): P80-82.

<sup>6</sup>明木. 国际标准 ISO5127-1983 (E-F) 的文献和情报工作词汇表[J]. 图书馆, 1988 (5): 45-50.

	<p>(1) 记录: record, and the objects are often something of facts.  (2) 纪录: document, and the objects are often something of explanations.<sup>7</sup> Such as making documentation movies.</p>
<p>Final choice, and motivation</p>	<p>Finally, I choose 文献纪录, based on the reasons below:</p> <p>If I keep the term document (文献), to refer to documentation, then the document and documentation will have a same Chinese translation. Besides, I think 文献 is not enough to show fully the meaning of documentation work, especially the components such as scheme, resource system (which emphasizes the structure and systematical). On the other hand, from the language habit, 文献 is more accepted as a noun, and not so stressing the verb aspect very strongly. I need to add a verb part.</p> <p>Documentation work contains not only the actions of dealing with the information (or resource), providing information/material/resources for further analyzing, but also the process of structuring the knowledge, explaining or give meaning to the actions, which is exactly 纪录.</p> <p>P.S. Documentation is used as a method in improving teaching and students performance evaluation, <b>in pre-school education</b>, for the teachers who work in kindergartens. They encourage teachers prepare a special documents file for each child, which could contains the information recording the children's growth information, such as their school work, the photos, teachers' comments or observing diaries etc.</p>
<p>Scientific references using this word in the targeted language</p>	<ul style="list-style-type: none"> <li>● The national standard of People's Republic of China : Information and documentation——Rules for bibliographic references and citations to information resources.(edition1983) (In Chinese) 中华人民共和国国家标准 文献著录总则 (1983年版)</li> <li>● Ge, R (2005). The dictions between 记录(record) and 纪录(document). <i>Preschool Education</i>, (6): 54-56. (In Chinese) 戈柔. 对“记录”与“纪录”的再思考[J]. 学前教育研究, 2008(6): P54-56.</li> <li>● Wang, Z. &amp; Zhu, J. From showing to documenting. <i>Preschool Education</i>, (3): 30-34. (In Chinese) 王峥, 朱家雄. 从展示到纪录[J]. 学前教育研究, 2005 (3) : P30-34.</li> <li>● Ke, P. (1986). The evolvement of the meaning of “working with documents” in Western. <i>Journal of information science</i>, (6):80-82. (In Chinese)柯平. 西方“文献工作”一词含义的演变[J]. 情报学刊, 1986 (6) : P80-82.</li> <li>● Ming, M. (1988). The terminology list of documentation and information of ISO 5127-1983 (E-F), (5): 45-50. (In Chinese)明木. 国际标准 ISO5127-1983 (E-F) 的文献和情报工作词汇表[J]. 图书馆, 1988 (5) : 45-50.</li> <li>● Corréard, M.H. &amp; Grundy V. (2009). <i>Le Grand Dictionnaire Hachette-Oxford</i>. Oxford University Press.</li> </ul> <p>The explanation of documenter in <i>Le Grand Dictionnaire Hachette-Oxford</i>, “to provide sb with information”, which is quite close to the meaning of 文献纪录 in Chinese.</p> 

<sup>7</sup> 戈柔. 对“记录”与“纪录”的再思考[J]. 学前教育研究, 2008(6): P54-56.

	The word designing the concept of (documentational) <b>genesis</b>
Possible translations, and associated definitions (in English)	Here we discuss only “genesis” (1) 起源. The origin of something, emphasizing the starting point and the path of its development. At the beginning, I considered also the Bible in Chinese 创世纪, the first chapter “The book of Genesis”, whereas the French “Genèse”. 创世纪 means the history/documentation of (how God) creates the world, so I chose the term 起源 in my previous versions. Another reason for this: In Darwin’s work, the “origin of species”, in Chinese we call it as 物种起源 (species’ origin). (2) 生成. The process of something is generated or emerged. I hesitated between “起源(origin)” and “生成 generation/emergence” at the beginning.
Final choice, and motivation	生成 was chosen finally, because it emphasizes the process of generating, which links both the origin and the final product.
Scientific references using this word in the targeted language	Bible in Chinese(圣经), English and French.

	The word designing the concept of <b>scheme</b>
Possible translations, and associated definitions (in English)	(1) 策略 is a more oral expression referring to strategy, trick, or method. Comparing to 图式(see below), 策略 doesn’t emphasize the “stable” aspect. For example, the 策略 about visiting Paris or Beijing when traveling, the 策略 for bargain when you want to buy some souvenirs, the 策略 to win a game etc. (2) 图式 an academic word, when you say 图式 to people, they may not understand what is 图式 if they never read Piaget.
Final choice, and motivation	图式, which is from the Chinese translation work from Piaget.
Scientific references using this word in the targeted language	● Piaget (1984). <i>Structuralism</i> . Beijing: The Commercial Press. (In Chinese) 皮亚杰. 结构主义[M]. 北京: 商务印书馆, 1984: p2.

	The word designing the concept of <b>instrumentation</b>
Possible translations, and associated definitions (in English)	In DAD, instrumentation and instrumentalization are two intertwined process. The adaption, the tendency to fit the new scheme into the prior scheme, namely the ability of adapting to the new situations.  Instrumentation refers to the scheme of utilization of the artifacts. (1) 工具性, the nature of instrument. We can define it as: the process that the instrument influences the teacher by showing its nature, and the teacher has to adapt herself/himself to the instrument according to its nature, by changing her/his own prior schema or knowledge. In this process, teacher is influenced and changed by the instrument. (2) 工具顺化 (instrument accommodation). Borrowed from Piaget’s theory of cognitive development. Accommodation in Piaget’s work, is a cognitive process in which we modify our existing cognitive schemas in order to include new information. It is a process of changing our knowledge structure. <b>In one word, in accommodation, the new information changes the already existing knowledge.</b>
Final choice, and motivation	工具性 We (Binyan and I) abandoned the second translation “工具顺化”, because we do not want to mix it with the other translation work of Piaget. It is widely known that there are many different interpretations of Piaget’s work, we are trying to avoid being one of them, since we are not sure which one is more suitable for the future development of DAD. So we decided to use 工具性, and propose our definition and explanation.

Scientific references using this word in the targeted language	<ul style="list-style-type: none"> <li>● Piaget (1984). <i>Structuralism</i>. Beijing: The Commercial Press. (In Chinese) 皮亚杰. 结构主义[M]. 北京: 商务印书馆</li> </ul>
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	The word designing the concept of <b>instrumentalization</b>
Possible translations, and associated definitions (in English)	<p>In DAD, instrumentation and instrumentalization are two intertwined process. Subject shape the artifact by instrumentalization.</p> <p>(1) 工具化, make the artifact into an instrument.</p> <p>(2) 工具同化 (instrument assimilation). Borrowed from Piaget's theory of cognitive development. Assimilation in Piaget's work, is a cognitive process that manages how we take new information and incorporate it into our existing knowledge. In one word, in assimilation, the new information fits in with the already existing knowledge.</p>
Final choice, and motivation	<p>工具化</p> <p>Same idea of the previous term.</p> <p>We (Binyan and I) abandoned the second translation “工具同化”, because we do not want to mix it with the translation work of Piaget. It is widely known that there a many different interpretation of Piaget's work, we are trying to avoid being one of them, since we are not sure which one is more suitable for the future development of DAD. So we decided to use 工具化, and propose or definition and explanation.</p>
Scientific references using this word in the targeted language	<p>Piaget (1984). <i>Structuralism</i>. Beijing: The Commercial Press. (In Chinese) 皮亚杰. 结构主义[M]. 北京: 商务印书馆.</p>

	The word designing the concept of <b>operational invariant</b>
Possible translations, and associated definitions (in English)	<p>The main bone is the translation of invariant. In either academic field (in the textbooks for the higher education) of mathematics or physics, invariant is more used as 不变量. For example, in Invariant Theory, or Graph Theory, as one of their basic concept, invariant is well known in Chinese as “不变量”.</p> <p>(1) 操作常量. The operational constant.</p> <p>(2) 操作不变量. The operational invariant.</p>
Final choice, and motivation	<p>操作不变量</p> <p>Actually both 常量 and 不变量 can represent the stable aspect, something more essence, and stay fixed/sure/immovable etc. Here we used the method of exclusion. We translate the two options back to English:</p> <p>不变量 is closer when correspond to invariant. It appears in both mathematics and physics. While 常量 is often translated as constant.</p>
Scientific references using this word in the targeted language	<ul style="list-style-type: none"> <li>● Carl. B. Boyer (2012). A history of mathematics. Beijing: Central Compilation Translation Press. (In Chinese) 卡尔·B.博耶 (CARL.B.BOYER). 数学史 修订版=A HISTORY OF MATHEMATICS: 中央编译出版社, 2012.05</li> </ul>

	The word designing the concept of <b>didactic</b>
Possible translations, and associated definitions (in English)	<p>The main bone is the last character: 法 or 论</p> <p>教学法: the method/approach/way of teaching</p> <p>教学论: the theory of teaching; instruction; didactics</p>
Final choice, and motivation	<p>教学论. The core part of fixing this choice is making clear what is the nature of Documentational Approach to Didactics.</p> <p>DAD is a theory, even there is an A (Approach) in it, it is still a theory, which is larger than approach of methodology. When consider DAD as a theory, we started to consider to use 教学论(generally we also translate it into pedagogy or didactics instruction). In Chinese translation work, there remains some misuse between pedagogy and didactics. Here we could make a list of their relationship and the hierarchy (from upper and wider, to lower and more specific):</p> <ul style="list-style-type: none"> <li>● Pedagogy: 教育学</li> </ul>

	<ul style="list-style-type: none"> <li>● Didactics: 教学论</li> <li>● Instruction: 教学法 (sometimes it is also translated as 教学论), For example, in many normal universities (such as ECNU), there is the department or major named “Curriculum and Instruction”.</li> <li>● Approach: 方法</li> <li>● Methodology 方法论 the methods of the methods</li> <li>● Method 方法</li> <li>● Tool 工具</li> </ul> <p>So it is clear now, we only need to choose 教学论. Besides the hierarchy above, there is another crucial reason: DAD is based on the European tradition to Didaktik, which means it should not be a simple method thing, but at least a theory, or bigger than a theory.</p>
Scientific references using this word in the targeted language	No

### 3. Other issues that you would like to share

There is no translation work of Vergnaud, which means we could continue a further step of scheme (the four components of scheme by Vergnaud), its inheritance from Piaget.

**Appendix: a final summary of the key terms translation:**

Word/expression	Final choice
Resource	资源
Instrument	工具 Developed by somebody, linked to somebody and his aim in some activities
Document	文献
Documentation	文献纪录
Documentational	文献纪录的
Didactic	教学论
DAD	文献纪录教学论
<i>Documentational genesis</i>	文献生成
Genesis	生成
Scheme	图式
Operational invariant	操作不变量
Instrumentation	工具性
Instrumentalization	工具化
Resource system	资源系统
SRRS	资源系统概念图
Reflective investigation	反思性调查法
dispositions	意向(态度和信念)
<i>methodological contract</i>	方法论契约
<i>Milieu</i>	环境
The theory of didactical situations (Brousseau 1998)	情势理论