

# Case Analysis of Environmental Impact Assessment for Ideological and Political Education

Haiying Zhang<sup>1\*</sup>, Hao Shi<sup>1</sup>

<sup>1</sup>School of Chemical and Environmental Engineering, Shanghai Institute of Technology, Shanghai, China

**Abstract.** The section of importance and rules of environmental impact assessment is chosen to analyse ideological and political education, and the three aims are analysed. It involves teaching aims, teaching target analysis, teaching content and data, teaching process and measures, and teaching results. It is concluded that most of the students, after learning of this section, have a relatively good grasp of the 2<sup>nd</sup> aim, i.e. a good grasp of importance of environmental impact assessment on environment protection and economic development. However, they need more time to set up consciousness of social responsibility and the sense of professional ethics.

## 1 Introduction

Environmental Impact Assessment is a required course for students whose major is Environmental Engineering [1]. It involves eleven chapters: general introduction to environmental impact assessment, environmental laws and regulations, procedures and measures for environmental assessment, engineering analysis, atmospheric environmental impact assessment, surface water environmental impact assessment, noise environmental impact assessment, environmental impact assessment of solid waste, ecological environmental impact assessment, environmental risk assessment, planning environmental impact assessment. Through learning this course, the students should grasp basic definitions and theories of environmental impact assessment, environmental laws and regulation, and procedures and measures of assessment. It aims to improve students' practical ability of environmental impact assessment on industrial project and ecological project [1,2].

In terms of ideological and political education, it has four aims. Firstly, it aims to cultivate the feelings of nation and country, social responsibility and environmental protection consciousness. Secondly, it aims to cultivate students' scientific spirit, "less is more", and truth-seeking. Thirdly, it aims to cultivate technology

accomplishment and engineering thinking of students. Finally, it aims at students' occupational emotion, regulation awareness and team work [3, 4].

This paper provides teaching design for one section of importance and rules for environmental impact design, involving teaching aims, teaching target analysis, teaching content and data, teaching process and measures, and teaching results.

## 2 Teaching aims of importance and rules for environmental impact assessment

This course is provided to junior students whose major is environmental engineering. The junior students have learned basic courses and partial professional courses, and grasp basic environmental knowledge and pollution control technologies in terms of water, gas, noise and solid waste. After learning these pollution control technologies and pollution mechanism, this course is provided to cultivate the students' ability of solving practical environmental problems. This course gives an integrated use of environmental protection knowledge in practical environmental impact assessment, and thus improve students' ability of solving practical problems using what they learned. Taking the section of importance and rules for environmental impact assessment as an example, the aims are shown in table 1.

**Table 1.** aims and relative contents

	Relative contents	aims
Knowledge transfer	The students are required to grasp definitions and types of environmental impact assessment, basic rules, technical rules, and their functions, and the importance to environment protection and economic development.	1 <sup>st</sup> aim

\*Corresponding author's e-mail: zhanghaiying@sit.edu.cn

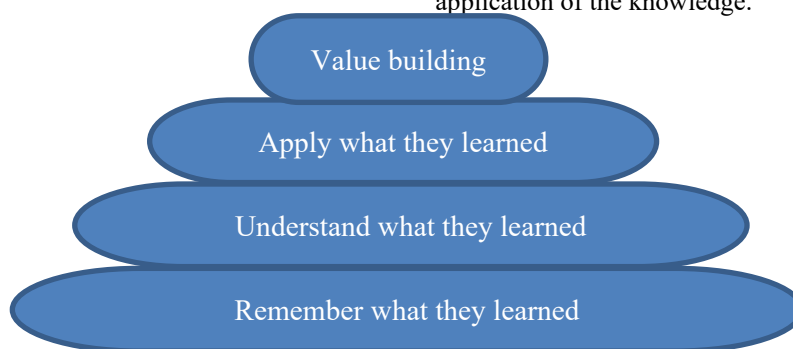
Ability training	It let students know importance of environmental impact assessment on environment protection and economic development, and thus cultivate their professional values of environmental protection, observing principles and taking environmental protection and sustainable development as the responsibility.	2 <sup>nd</sup> aim
Emotional thinking	It let students know importance of observing basic principles and technical principles in environmental impact assessment, and thus set up consciousness of social responsibility and sense of professional ethics.	3 <sup>rd</sup> aim

### 3 Teaching content and idea

This section involves three parts. The first part is introduction of definition, types and three stages in environmental impact assessment, and the aim thereof. The second part is introduction of basic rules and technical rules that should be observed in environmental impact

assessment, and the importance. The third part is special cases, in which serious results are witnessed without environmental impact assessment.

The teaching ideas is shown in Fig. 1. Through learning of this section, the students should firstly remember what they learned and then understand the knowledge. They can apply what they learned only after understanding the knowledge. Finally, the professional value is built during application of the knowledge.



**Fig.1** teaching idea of this section

### 4 Teaching process and measures analysis

Teaching measures involve class ppt for teaching, video of engineering cases and pictures.

#### 4.1 Question import

This course begins with introduction of the law of the People’s Republic of China on Environmental impact assessment, which is promulgated for effect on September 1, 2003. It has been enacted for sustainable development of economy, preventing negative impacts of programs and construction projects. What’s environmental impact assessment? How many types is environmental impact assessment divided into? These questions lead students to think. The questions and the related content are shown in Table 2. Through this way, it is relatively easy to attract students’ interest.

**Table 2.** Questions and relative content

	Questions	Relative content
1	What’s environmental impact assessment?	Definition of environmental impact assessment.
2	How many types is environmental impact assessment divided into?	Types of environmental impact assessment.
3	What rules should it comply with?	Basic rules and technical rules.

#### 4.2 Teaching process

In the first part of this section, definition of environment, environmental capacity, and environmental impact

assessment are introduced. Environmental impact assessment for plan, and that for construction projects are explained. Both types have three stages, engineering analysis, environmental present situation analysis, environmental estimate and assessment. In the second part,

the basic rules and technical rules that should be observed in environmental impact assessment, are introduced. The assessment process should be objective, open and impartial. In the third part, special cases for different content are given to make it easy for students' understanding of this section.

### 4.3 Cases used for this section

Four cases are used to explain the content of this section, as shown in Table 3. The case of chemical engineering projects are major source of pollution, involving gas pollution, water pollution, solid waste pollution and noise

pollution. In addition, many risks exist due to existence of serious risk sources such as dangerous process, dangerous material storage and hazardous waste management. Hence, environmental impact assessment is particular important for these projects to control all kinds of pollution and to reduce risk of hazardous. The case of environmental impact assessment for a city plan is quite different from for that for construction projects in terms of assessment process, methods and laws. Hence, case 2 is used to analyse the difference between the two types. Case 3 is used to explain the three stages for environmental impact assessment, site survey, engineering analysis and environmental present situation analysis, environmental estimate and assessment.

**Table 3.** the content cases used to analyse

Cases		Relative content
Case 1	Environmental impact assessment for a chemical engineering factory.	Importance of environmental impact assessment.
Case 2	Environmental impact assessment for a city plan.	Two types and the difference.
Case 3	Environmental impact assessment for the expressway engineering construction project.	Three stages.
Case 4	Environmental impact assessment for wig factory.	Basic rules and technical rules.

## 5 Teaching result analysis

A test is given after learning this section to examine the teaching effect, and the aim-achievement analysis is shown in Table 4.

**Table 4.** Aim-achievement analysis

NO.	Student ID	1 <sup>st</sup> aim		2 <sup>nd</sup> aim		3 <sup>rd</sup> aim	
		Score (30%)	Achievement degree	Score (40%)	Achievement degree	Score (30%)	Achievement degree
1	1510700301	23	0.77	36	0.90	19	0.63
2	1510700308	19	0.63	21	0.53	15	0.50
3	1510700508	18	0.60	27	0.68	17	0.57
4	1510700511	27	0.90	34	0.85	19	0.63
5	1510700518	24	0.80	38	0.95	12	0.40
6	1510700816	26	0.87	36	0.90	19	0.63
7	1510700925	18	0.60	35	0.88	18	0.60
8	1510700931	20	0.67	34	0.85	21	0.70
9	1610700939	21	0.70	33	0.83	21	0.70
10	1710741101	19	0.63	33	0.83	23	0.77
11	1710741102	23	0.77	35	0.88	21	0.70
12	1710741103	28	0.93	40	1.00	20	0.67
13	1710741104	29	0.97	38	0.95	21	0.70
14	1710741105	21	0.70	39	0.98	24	0.80
15	1710741106	22	0.73	36	0.90	25	0.83
16	1710741107	16	0.53	36	0.90	21	0.70
17	1710741108	18	0.60	24	0.60	20	0.67
18	1710741109	25	0.83	37	0.93	19	0.63

19	1710741110	27	0.90	26	0.65	22	0.73
20	1710741112	28	0.93	33	0.83	15	0.50
21	1710741113	21	0.70	15	0.38	17	0.57
22	1710741114	20	0.67	24	0.60	17	0.57
23	1710741115	20	0.67	38	0.95	27	0.90
24	1710741117	19	0.63	26	0.65	19	0.63
25	1710741118	22	0.73	22	0.55	17	0.57
26	1710741119	25	0.83	33	0.83	26	0.87
27	1710741120	28	0.93	33	0.83	25	0.83
28	1710741121	23	0.77	36	0.90	22	0.73
29	1710741122	26	0.87	34	0.85	27	0.90
30	1710741123	24	0.80	32	0.80	21	0.70
Average value		23	0.75	32	0.8	20	0.68

The aim-degree is 0.75 for the 1<sup>st</sup> aim, 0.8 for the 2<sup>nd</sup> aim and 0.68 for the 3<sup>rd</sup> aim. It shows that the student has a good grasp of the 2<sup>nd</sup> aim, and a poor grasp of the 3<sup>rd</sup> aim. Most of the students know importance of environmental impact assessment on environment protection and economic development. Observing principles and taking environmental protection and sustainable development as the responsibility cultivate their professional values of environmental protection. However, they need more time to set up consciousness of social responsibility and sense of professional ethics.

## 6 Conclusions

This paper provides teaching design for the section of importance and rules for environmental impact design, involving teaching aims, teaching target analysis, teaching content and data, teaching process and measures, and teaching results. Three aims of knowledge transfer, ability training, and emotional thinking are analysed. It indicates that most of the students, after learning of this section, have a relatively good grasp of the 2<sup>nd</sup> aim, i.e. a good grasp of importance of environmental impact assessment on environment protection and economic development. However, they need more time to set up consciousness of social responsibility and sense of professional ethics.

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## References

1. Li Shuqin, Meng Xianlin. Environmental Impact Assessment. Beijing: Electronic Industry Press. 2016, P.20.
2. Chen Ke. Teaching method analysis of ideological and political education and Environmental Impact Assessment. Jiangxi Chemical Industry, 2020 (3), 137-139.
3. Liao Fang. Ideological and political education for

college education. Data of Culture and Education, 2020 (10), 140-147.

4. Ye Lian. Ideological and political education and quality education. University Education, 2020 (3), 121-123.