

**Institute of Education  
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**The Analects of Confucius and the development  
of middle childhood in Taiwanese schools**

**by**

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## Abstract

In earlier days, the main guiding principle in Taiwanese education was Confucian ethics, which arguably also provides a strong and culturally resonant context for stimulating thought about the nuances of moral issues. However, as Taiwanese society has changed, Confucianism has largely disappeared from children's education, and many educational experts (though not all) think Confucian education is old-fashioned and unhelpful for enhancing children's thinking. Globalisation and modernisation has meant that the curriculum has instead been substantially influenced by Western concepts, which seem more up to date, but which lack the same degree of implicit cultural resonance. Reflecting this shift, the Ministry of Education has provided Multi-edition Teaching Materials to help develop children's thinking, but these are based on Western methods, including the use of contemporary moral dilemmas to stimulate debate (cf. Fisher 1998, 2005a,b; Lipman 1977, 2003; Trickey and Topping 2004). Materials of this kind are likely to be largely unfamiliar to most children, potentially undermining their ability to engage in productive discussion.

The objectives of this research were therefore to a) investigate the comparative benefits of using the *Analects of Confucius* and contemporary moral dilemmas as the focus of dialogic teaching aimed at developing children's critical thinking; b) examine the growth of children's discursive skills over time and across the primary school age range, via extended application of materials of both types; c) consider the impact of teacher behaviour within dialogic lessons on this development; and d) examine in more detail the constraints on the use of dialogic teaching in Taiwanese schools, and how its introduction might be better assisted.

The main study employed an extended comparative intervention across six classes of Taiwanese children, involving two types of experimental group. Two classes of each of different age groups (7 to 8, 9 to 10, and 11 to 12 year olds) were engaged in dialogic teaching over a 12 week period, but using different materials, either the *Analects* or moral dilemma stories. Three further classes served as control groups, one at each age level, who followed the regular curriculum without dialogic teaching intervention. Pre-tests of students' language achievement scores in Chinese were used to establish equivalence between conditions. A post-test, which involved children writing an essay on either an Analect or a moral dilemma, was used to examine the intervention outcomes. A survey of participants' parents was employed to gain information on how far ethical and philosophical issues are discussed at home, in what context, and whether or not moral dilemmas and Confucian ideas ever form part of that discussion. The objective was to establish whether the supposed difference between the two in cultural resonance is actually borne out in parental conversations

with children. Interviews were used to evaluate teachers' viewpoints on whether dialogic teaching could be modified in Taiwanese primary schools to employ either the traditional *Analects of Confucius* or Western philosophical moral dilemma children stories to effectively cultivate Taiwanese children's ability to think critically.

Detailed content analysis of both in-class discussions over the 12-week period of the intervention and the subsequent post-test essays found that the dialogic intervention improved children's articulation and explanation of moral issues relative to the control group, with all the age groups showing increasingly differentiated dialogue despite the reduction, or even the removal, of teacher support during the discussions. Disagreements, agreements, elaborations and questions all increased in frequency. In terms of differences between the impact of the *Analects* and the moral dilemma interventions, use of disagreements, agreements, and explanations progressed more consistently during the course of the *Analects* lesson, whilst there was greater fluctuation in the frequency of these in the moral dilemma lessons. The youngest age group showed less sign of gain in use of questions in the *Analects* lessons, and produced fewer agreements and explanations during the course of those lessons. The two interventions were much more comparable in these respects among the older two age groups. In general, the dialogue data indicated that children in the youngest age group gained more from the moral dilemma lessons, whilst the two older age groups gained more from the *Analects* lessons.

This corresponds with the parents' usage: the survey results showed that parents talked about the issues relevant to moral dilemmas more often than discussing Chinese proverbs with their children, but that the latter was more likely to occur where parents were better educated, and in families with older children. Taken together, this suggests that the *Analects* may be a better resource for promoting critical thinking once children have attained a certain level of understanding.

The interview responses revealed that teachers agreed with the benefit of developing children's thinking by means of dialogic teaching. However, most of them merely used it as part of whole class discussions and individual talks about deviant behaviour with specific pupils because of a tight and stressful curriculum and large class sizes. The key to progress may be finding better ways to provide teachers with direct experience of how to use group discussions in class, perhaps with the more responsive older students and more culturally resonant materials.

## Table of contents

Chapter 1: The role of critical thinking in the pedagogy of .....	14
Primary education in Taiwan	
1.1 Establishing the research background.....	14
1.2 Rationale for focusing on dialogic approaches to promoting moral reasoning.....	18
1.3 Research question.....	26
1.4 Research design.....	27
1.5 Significance of the study.....	32
1.6 Outline and structure of the thesis.....	33
Chapter 2: Confucian education and the Development of Taiwanese.....	36
education	
2.1 Introduction.....	36
2.2 Confucian Education.....	38
2.2.1 What is Confucianism? .....	38
2.2.2 Confucius and education.....	40
2.2.3 The <i>Analects of Confucius</i> .....	44
2.3 Historical development of the role of Confucianism in Taiwanese education.....	56
2.3.1 Period of traditional Chinese education and its aftermath.....	57
2.3.2 How is Confucianism rooted in Taiwanese education? .....	60
2.3.3 Educational impact of John Dewey's thinking since the 20 <sup>th</sup> century.....	64
2.3.4 Dewey's thoughts affect Confucian philosophies in modern Education .....	67
2.4 Important social evolutions which changed Taiwanese education.....	70
2.5 Development of basic education and the introduction of dialogic	

Teaching in modern Taiwan .....	74
2.6 Conclusion.....	78
Chapter 3: The Development of Children's Critical Thinking in Middle	
Childhood.....	80
3.1 Introduction.....	80
3.2 Development of children's critical thinking in middle childhood.....	83
3.2.1 Characteristics of children's thinking development in middle	
Childhood.....	83
3.2.2 Thinking as developing critical thinking.....	87
3.3 Approaches to the development of children's moral reasoning.....	90
3.4 Applying philosophy to cultivate a child's thinking.....	93
3.4.1 Western philosophical approaches to developing a child's	
thinking.....	93
3.4.2 The use of Confucianism to develop children'	
critical thinking .....	98
3.5 Using dialogue to develop a child's critical thinking.....	101
3.6 Using dialogic approaches employing the Analects of Confucius	
and Western Philosophical moral dilemma stories toe develop	
children's moral reasoning and critical thinking.....	108
3.7 Conclusion.....	114
Chapter 4: Methodology.....	116
4.1 Introduction.....	116
4.2 The dialogic intervention.....	120
4.2.1 Study material .....	120
4.2.2 Intervention design .....	130
4.2.3 Intervention Post-test.....	132
4.2.4 Data management and analysis strategies .....	133
4.2.4.1 Transcription of classroom talk .....	133

4.2.4.2 Content analysis and dialogue coding of classroom conversation .....	135
4.2.4.3 Content analysis and coding of the post-test essays .....	138
4.3 Survey of parental practice at home .....	138
4.4 Interviews with Teachers .....	141
4.5 Reliability and Validity .....	144
4.6 Process of data collection .....	146
4.7 Role of researcher .....	147
4.8 Ethical issues .....	148
4.9 Summary.....	149
Chapter 5: Pilot Study .....	150
5.1 Introduction.....	150
5.2 Sample, materials, and process of pilot study .....	150
5.3 Analysis of dialogue .....	152
5.3.1 The analysis of Group A's conversation .....	152
5.3.1.1 Teacher-researcher conversation in Class A .....	153
5.3.1.2 Pupils' conversation in Class A.....	154
5.3.2 The analysis of Group B's conversation .....	156
5.3.2.1 Teacher-researcher conversation in Class B .....	156
5.3.2.2 Pupils' conversation in Class B.....	157
5.3.3 The analysis of Group C's conversation .....	159
5.3.3.1 Teacher-researcher conversation in Class C .....	160
5.3.3.2 Pupils' conversation in Class C.....	161
5.4 Comparison of dialogue in the three class .....	162
5.5 Teachers' interview .....	165
5.5.1 Western concepts of education .....	166
5.5.2 The development of children's reasoning .....	167
5.5.3 Constrains on developing reasoning .....	168

5.5.4 The Analects of Confucius .....	169
5.5.5 The use of dialogic teaching .....	170
5.5.6 Combining the Analects with dialogic teaching .....	170
5.5.7 Summary of the interview responses .....	171
5.6 Summary of Pilot Study Outcome .....	172
5.7 Recommendations for the main study design.....	174
Chapter 6: Overview of Main study .....	176
6.1 Introduction .....	176
6.2 Design of the study .....	176
6.3 Intervention Sample .....	177
6.4 Materials for intervention .....	179
6.5 Recording of group dialogues .....	179
6.6 Language-test and post-test .....	180
6.7 Parents' survey .....	181
6.8 Teachers' interview .....	182
Chapter 7: Survey of Parents .....	184
7.1 Introduction .....	184
7.2 Scoring of the survey questions .....	184
7.3 Responses to the fixed question .....	186
7.4 Responses to the open questions .....	188
7.5 Discussion and conclusion .....	196
Chapter 8: The Dialogic Intervention Study .....	198
8.1 The result of language-tests and post-tests .....	198
8.2 The outcome of dialogue teaching programme .....	199
8.3 The Post-Intervention Essay Test .....	216
8.4 Discussion and Conclusion .....	227
Chapter 9: Outcomes from the Teachers' Interview .....	229
9.1 Introduction .....	229



9.2 The analysis of interview.....	229
9.3 The circumstances of current primary school curriculum in Taiwan....	230
9.4 Training children's thinking ability via maths, and developing children's judgment .....	231
9.5 The idea of critical thinking .....	232
9.5.1 Strategy of developing critical thinking .....	232
9.5.2 Cultural connection that might be of use .....	234
9.5.3 Practical ways of developing critical thinking .....	234
9.6 The concept of the teaching using the Analects .....	236
9.6.1 Actual use of the Analects in teaching .....	236
9.6.2 The value of teaching the Analects .....	237
9.7 The application and value of moral dilemma teaching .....	238
9.8 The concept of dialogue teaching .....	239
9.8.1 Practical use dialogic teaching .....	239
9.8.2 Actual use of dialogic teaching in group work .....	240
9.8.3 The value of using dialogic teaching .....	241
9.9 Discussion and Conclusion .....	242
Chapter 10: Discussion .....	245
10.1 Introduction .....	245
10.2 General discussion .....	245
10.3 Limitation of the research .....	254
10.4 Future research .....	256
10.4.1 Promoting dialogic teaching in primary and secondary schools in Taiwan.....	258
References .....	261
Appendix I Consent letter to school principals .....	290
Appendix II Sample of children's conversation in the pilot study .....	291
Appendix III Interview questionnaire to teachers in the pilot study .....	309

Appendix IV	Sample of intervention lesson plans.....	312
Appendix V	Questionnaires of parents' survey .....	314
Appendix VI	Consent letter to parents .....	317
Appendix VII	Questionnaires of teachers' interview .....	318
Appendix VIII	Consent letter to teachers .....	320
Appendix IX	Sample of the post-test .....	321
Appendix X	Sample of children's dialogue in the main study.....	324
Appendix XI	Figures of target children's observed dialogic skills .....	341

## List of tables and figures:

Table 4.1. Summary of empirical study components comprising .....	118
Table 4.2 Stories and target sentences of the Analects lessons applied in the main study.....	123
Table 4.3 Stories and questions applied to Stories lessons in the main study.....	128
Table 5.1. Frequency of teacher-researcher input to group and class dialogue by coding category in Class A .....	153
Table 5.2. Frequency of pupil input to group and class dialogue by coding category in Class A .....	155
Table 5.3. Frequency of teacher-researcher input to group and class dialogue by coding category in Class B .....	156
Table 5.4. Frequency of pupil input to group and class dialogue by coding category in Class B .....	159
Table 5.5. Frequency of teacher-researcher input to group and class dialogue by coding category in Class C.....	160
Table 5.6. Frequency of pupil input to group and class dialogue by coding category in Class B .....	161
Table 6.1. Participant characteristics .....	178
Table 7.1. Number of respondents in each sub-category for the demographic questions, plus breakdown by sub-category of the number of respondents reporting discussion of moral dilemmas and Chinese proverbs with their children .....	187
Table 7.2a. Frequency of categories of response to moral dilemma Question 1, broken down by respondent/family characteristics.....	191
Table 7.2b. Frequency of categories of response to moral dilemma Question 1,	

broken down by reported frequency of discussion in the home.....	192
Table 7.3a. Frequency of categories of response to analect Question 1, broken down by respondent/family characteristics.....	193
Table 7.3b. Frequency of categories of response to analect Question 1, broken down by reported frequency of discussion in the home.....	194
Table 7.4. Cross-tabulation of responses to moral dilemma Questions 1 and 2....	194
Table 7.5. Cross-tabulation of responses to analect Questions 1 and 2.....	195
Table 8.1. Mean for each element of dialogue broken down by time point.....	201
Table 8.2. Mean for each element of dialogue broken down by age group and lesson type .....	202
Table 8.3. Summary of ANOVA results for the dialogue codes.....	206
Figure 8.1. Time x lesson type trends for disagreements.....	207
Figure 8.2. Time x lesson type trends for agreements.....	207
Figure 8.3. Time x lesson type trends for explanations.....	208
Figure 8.4. Time x lesson type trends for questions.....	208
Figure 8.5. Time x class age trends for questions.....	209
Figure 8.6. Time x class age trends for questions.....	209
Figure 8.7. Time x class age trends for references back.....	210
Figure 8.8. Time x class age trends for references back.....	210
Figure 8.9. Age x lesson type trends for agreements.....	211
Figure 8.10. Age x lesson type trends for explanations.....	211
Figure 8.11. Age x lesson type trends for references back.....	212
Figure 8.12. Age x lesson type trends for questions.....	212
Figure 8.13. Age x lesson type trends for teacher involvement.....	213
Figure 8.14. Time x age trends for propositions.....	213
Figure 8.15. Time x age trends for agreements.....	214

Figure 8.16. Time x age trends for explanations.....	214
Figure 8.17. Time x age trends for elaborations.....	215
Figure 8.18. Time x age trends for questions.....	215
Figure 8.19. Time x age trends for teacher involvement.....	216
Table 8.4a. Mean rate of essay codes at post-test (SD in parentheses) for the age 7-8 pupils.....	220
Table 8.4b. Mean rate of essay codes at post-test (SD in parentheses) for the age 7-8 pupils.....	221
Table 8.5a. Mean rate of essay codes at post-test (SD in parentheses) for the age 9-10 pupils.....	222
Table 8.5b. Mean rate of essay codes at post-test (SD in parentheses) for the age 9-10 pupils.....	223
Table 8.6a. Mean rate of essay codes at post-test (SD in parentheses) for the age 11-12 pupils.....	224
Table 8.6b. Mean rate of essay codes at post-test (SD in parentheses) for the age 11-12 pupils.....	225
Table 8.7. Mean rate of essay codes at post-test (SD in parentheses) for all three age groups, collapsed across condition and essay type.....	226

## **Chapter 1: The role of critical thinking in the pedagogy of primary education in contemporary Taiwan**

### **1.1 Establishing the research background**

In recent years, politicians have explored the concept and process of ‘de-sinification’ in Taiwan, since many important aspects of Chinese culture have gradually been altered by Taiwan’s various ruling parties. The concept of an ‘Independent Taiwanese culture’ was sequentially promoted by former Taiwanese presidents, Lee and Chen, and as part of this, the influence of Chinese culture gradually decreased within Taiwanese education. In 1994, former president Lee announced a revision of the national compulsory curriculum in secondary schools<sup>1</sup> (which will be explored in chapter two), and the percentage of weekly lessons for Chinese learning including Chinese literatures and histories, classical poetries, and glossaries was reduced from 21% to 14%. Again, in 1995, he declared that the percentage of weekly Chinese classes in high schools<sup>2</sup> would be reduced from 19% to 13%, and the period of Chinese lessons in primary schools was cut even more, by 50% from 10 to 5 hours every week. After this, President Chen took over the government from the previous administration and pronounced that traditional classical Chinese articles in Chinese textbooks had to be reduced by 45% during the 9 years of compulsory Taiwanese education (primary schools and secondary schools) (Zhuang, 2008).

Further pressure to move in this direction came from data on the relative performance of Taiwanese school children. In 2006, Taiwan first began to participate in the Progress in International Reading Literacy Study (PIRLS), which is a worldwide

- 
1. In the Taiwanese educational system, secondary school is for 13 to 15 year-old children.
  2. High school is for 16 to 18 year-old students.

study of the comparative reading literacy of young pupils. PIRLS examines the reading attainment and reading behaviour and approaches of fourth-grade students in the United States and their counterparts in the fourth grade in other participating countries. In total, 45 regions and 38 countries took part in PIRLS in 2006, including 5 Canadian provinces, and separate Flemish and French-speaking education systems in Belgium. Russia, Hong Kong, Alberta Canada, Singapore, British Columbia Canada were ranked in the top five, while Taiwan was ranked fourteenth. Overall, 28 Asian countries joined this study, excluding China and Japan, and Taiwan occupied third place in the ranking of 28 Asian countries. However, Taiwan lagged far behind Hong Kong and Singapore (a large majority of the population of Singapore is of Chinese origin), and also, in terms of the result of the assessment<sup>3</sup> the inferential ability of Taiwanese children was weaker than that of children in Hong Kong and Singapore.

Searching for ways to explain these differences, Mr. Lin, an academic administrator in the Taiwan National Science Council, claims that many educators in Hong Kong considered the contents of traditional Chinese books about Chinese learning to be incomprehensible, containing brief words which could not help children to develop their reading ability and reasoning. Therefore, the Ministry of Education in Hong Kong decided to revolutionise the national curriculum and teaching materials, including abolishing use of the *Analects of Confucius* and *Mencius*. Instead, it used magazines, newspapers, and story books to train pupils' reading ability, with more dialogic styles (classroom discussion) which reflect daily life, in order to enhance

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3. The assessment of PIRLS includes two parts: purpose of reading and process of comprehension. The purpose of reading part has two sections including reading for literary experience and reading to acquire and use information. The process of comprehension part has three sections containing retrieval and straightforward inferencing, and a interpreting, integrating, and evaluating. (Mullis, Martin, & González, 2004)

children's reasoning. Singapore selected English as the language in which to conduct the tests, and the International Association for the Evaluation of Educational Achievement states that Singapore's education offers a sound foundation for the development of reading literacy in English, for both functional use and literacy experience. A dialogic approach is encouraged in schools and in families, with Singaporean parents being helped to implement an English environment involving reading and speaking within the home. The Singaporean approach was not feasible for Taiwan, though it did indicate the potential value of incorporating Western influences. The successful performance of children in Hong Kong, which had not adopted English in the same way, provided a more suitable model for how things might be better managed in Taiwan. Following this example, the Taiwanese Ministry of Education applied similar ideas and eliminated the traditional *Analects of Confucius* and *Mencius* from the national curriculum. (Xu, 2007)

However, some experts still believe that traditional classical Chinese learning can better cultivate children's moral education because the texts address correct behaviour and reasoning about moral rules and norms. They have therefore encouraged private educational institutions and public schools to establish reading classes using classical Chinese texts. In response to this, many primary schools throughout Taiwan currently hold reading classes of this kind. Moreover, some parents take their children to the Confucian Temple in Taipei specifically to attend the reading lessons on the *Analects of Confucius* (Zhuang, 2008).

As this illustrates, desinification ignores the fact that cultures generate embedded resources which have particular resonances for their members. Simply abandoning these can leave populations feeling rootless, and seeking alternative ways to return to



what is familiar to them. However, cultural circumstances do change, and these changes need to be responded to. A better way forward, though, might be to find ways of re-using existing resources such as the Analects that are in keeping with changed demands. The present thesis considers one way in which this might be done. Making the Analects an explicit tool for teaching moral reasoning within dialogic pedagogical approaches is one possibility, and the rationale for doing this is explored both theoretically and empirically in what follows.

Addressing this possibility uncovers complex tensions. Mercer and Littelton (2007) maintain that, since an educated person is essentially engaged in learning some specific methods of using language, language is also a teacher's major educational instrument, and because of this, spoken dialogue deserves special attention. Education is a dialogic procedure between pupils and teachers, operated within schools, and the values and social practices of schools are regarded as being cultural foundations. However, although some educators have encouraged parents to send their children to participate in additional lessons of classical Chinese learning, the teachers involved are merely guiding pupils to read and memorise the texts in traditional fashion, without the benefit of interactive discussion. Introducing a different approach to the use of the Analects may to some people be little better than abandoning them completely.

Also, although the Taiwanese Ministry of Education has replaced traditional Chinese materials with more dynamic teaching supplies, and encourages teachers to apply dialogic teaching to train children's thinking skills as in Hong Kong, the pedagogy of dialogic teaching is actually rarely used in Taiwan. Most teachers in Taiwan find it fairly difficult to implement dialogic teaching in the primary school classrooms where

it has been introduced most successfully elsewhere, because of various pedagogic limitations, which include limited class-time (40 minutes in a lesson), a conflicting school agenda, diverse subjects with restricted textbooks, pupils' examinations (two achievement tests involving different subjects, such as Chinese, maths, science, social science, etc. in every semester), and large class sizes (30 students in a class). Also, the age of the students constrains teachers from including a dialogic process in the development of pupils' thinking in the classroom, because they assume that younger pupils are not capable of engaging in productive discussion.

This then is the basic motivation underpinning this study. The present researcher has spent many years teaching in primary schools in Taiwan, and this experience has led her to conclude that it is not the case that traditional materials cannot be used with dialogic teaching. In fact, in the right type of lesson, they may actually be better, because they have an inherent association with reasoned thinking in Taiwanese culture, especially in terms of morality. One way of investigating this would be to compare the use of Confucian materials as part of dialogic lessons with that of the more Western materials used as part of other research, especially that on ways of promoting critical thinking within the context of moral reasoning. Therefore, this research applies one of the conventional classical Chinese books, the *Analects of Confucius*, to develop children's critical thinking and moral reasoning in a primary schools in Taiwan, contrasting use of this with the use of stories about moral dilemmas. Some details of the rationale, research design, and structure of this research will be presented in the following section.

## **1.2 Rationale for focusing on dialogic approaches to promoting moral reasoning**

As noted in the opening section, unparalleled development has recently taken place in

the area of childhood education in modern Taiwan, as part of which critical thinking and moral reasoning are in a constant state of development, and the best approach to follow is not fully understood. Children have been subjected to various kinds of curricular changes, the aim being to expand their knowledge and to cultivate their thinking. However, Jing (2005) maintains that this new wave of modernisation has driven the curriculum of primary school education into an ambiguous and conflicting position regarding pedagogy to develop children's thinking ability. Lee (2003) describes how the Ministry of Education in Taiwan commissioned a major curriculum reform of basic education from 2000 onward, the main guiding principle of which was at first primarily based on Confucian ethics with the added supplement of Western methodology. For example, morality was accredited with new connotations such as democracy, intelligence, open-mindedness, etc., in place of some Confucian principles, such as "*li*" (rituals) and "*de*" (virtues) (Di, 1992). However, in recent years, this educational policy has shifted, and the current mainstream education now tends to utilise Western methods *per se* as its primary source. Traditional Confucian values are therefore being positioned as a supplement to the main teaching, but their real status remains unclear.

Although there is confusion about the pedagogical approach that should be adopted, the development of children's critical thinking and moral reasoning has become a significant issue within schools in Taiwan. In part this is because the possibility and importance of promoting such skills has become more widely recognised. The critical thinking and moral reasoning abilities of pupils of all educational standards pervade recent educational literature (Brookfield, 1986; Meyers, 1986; Ries, 1992; Paul, 1993; Langford, 1995; Case & Wright, 1996, 1997; Pritchard, 1996). Cannon and Weinstein (1986) specified that moral reasoning needs critical thinking. Both "critical thinking

and moral education entail the analysis of issues, the synthesis of differing perspectives and bodies of information, and the evaluation of outcomes.” (p.1, cited in Weinstein, 1988). In line with this thinking, there have been attempts at curriculum design to advance critical thinking skills and moral development in older children, such as work by Pierce, Lemke, & Smith (1988), who found significant benefits for both moral reasoning and critical thinking skills at the end of the project.

To elaborate on the connection between critical thinking and moral education, moral reasoning may be briefly defined as individual or collective practical reasoning about what, morally, one ought to do (Langford, 1995). Moral reasoning is how people deliberate issues concerning what is right or wrong (Moshman, Glover, & Bruning, 1987). Critical thinking is the ability to understand or work out the nature of a particular problem or conflict, and to guide one’s thinking about how this might be solved. It is defined as “that mode of thinking – about any subject, content, or problem – in which the thinker improves the quality of his or her thinking by skilfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them” (Paul, 1993, p. 7). In addition, critical thinking involves referring to evidence, data, reasons, and explanations, following progressive areas of thought, and understanding inferences, implications and outcomes (Davis-Seaver, 2000; Paul, 1990; Beyer 1985; Nosich, 1993). If critical thinking involves reasoning about what to do and what to believe, then this reasoning contains moral beliefs (Wright & La Bar, 1992).

Although the application of critical thinking to education and curricula can generally be discovered in higher education, the aims and how these aims should be achieved have not yet been agreed, and there is little consistency in the approach at primary and

elementary levels. Both moral reasoning and critical thinking are complex modes of thought, and cannot be learnt as sets of abstract principles; though such abstract understanding may be arrived eventually, it has to be built up by engaging with analysis of a range of specific experiences and the perspectives of participants in these (Lipman, 1988; Ennis, 1996; Paul, 1990). Critical thinking in the classroom is best promoted by encouraging listening and dialogue, thus promoting a community of ethical enquiry. This technique encourages children to become independent and rational thinkers (Splitter and Sharp, 1995), and places an emphasis firmly on the potential value of a dialogic pedagogy.

The importance of critical thinking in general has come to pervade Taiwanese education, although its development was initially underlined in higher education before the Taiwanese government decided that its promotion should begin with basic primary education. Taiwan's Ministry of Education (2001) promoted a nine-year integrated curriculum, with a focus on independent critical thinking and the ability to problem-solve as an educational aim in social studies. Furthermore, the Ministry of Education emphasised that the heart of schooling should be shifted from teaching to learning, namely, from inactively absorbing facts to actively using ideas to apply them to specific problems. Nevertheless, regardless of both academics and government announcing the significance of critical thinking, the type of guidance still given in social studies' classrooms in Taiwanese primary and secondary schools is commonly teacher-dominated, exam-orientated, and characterised by textbook recitation by big groups, even though there is little reason to suppose it is possible to learn thinking via the acquisition of knowledge of a set of abstract principles. Most students are expected to memorise huge chunks of textbook knowledge to achieve good results, since the Taiwanese educational system has long stressed more formal schooling, and

In contrast, the methods used in Western-designed interventions to support critical

thinking tend to stress an inferential rather than an extractive approach (Lee, 1996). For example, some researchers (Carey, 1985; Anderson *et al.*, 2001; Reznitskaya *et al.*, 2009) have made use of stories encapsulating moral dilemmas such as *Amy's goose* (Holmes, 1977) to develop children's thinking skills. This story is about a lonely farm girl, Amy, who saves a wild goose that has been harmed by a fox. Amy tends the wounded goose back to health, and a special relationship grows between them. Amy then has to make a decision whether to keep the goose as a pet or to let it fly south with the rest of its flock. The more explicit content of these stories means that when they are used as part of group discussion, participants can use expressions like 'in the story, it said' or 'on page 23, she said', to clearly and concretely indicate sources of information, thus helping them to cultivate the reliability of their arguments during discourse. In addition, such materials can be used as part of a discovery process regarding the laws of reasoning and their relationship to issues which are significant in children's lives. This can help them to learn the difference between logical and illogical thinking. The idea is that when discussing the stories children are invited to explore the issues surrounding the question of, for example, whether it is morally right to allow humans to interfere with nature. This inquiry is one that most children can perceive as needing an answer. But it leads into deeper philosophical questions such as what constitutes full moral understanding, and when it is right to force costs on others. Children should not be assumed to be capable of resolving such questions, but opening them up to their attention and encouraging reflection can be seen as a step towards acquiring this ability (Lipman, 1977).

Whether extractive or inferential materials are used, dialogue is likely to be central to progress. Thayer-Bacon (2000) claims that a crucial rationale and strategy to cultivate critical thinking is 'With a desire to continually enlarge my thinking and achieve

greater wide-awakeness concerning critical thinking, I turn to listening to more voices' (p. 109, cited in Gibson, 2001). Significantly, this call for enlarged thinking and more voices can readily be met, first by cooperating and interacting with real others, and second by applying children's abilities of imagination, emotion, intuition and reason to moral thinking. The perspectives of participants provide the basis for the construction of knowledge as members of communities of enquirers (Gibson, 2001). Because it emphasises the possibility of such a community, the employment of group discussion to promote critical thinking and moral reasoning may be especially productive.

In line with this, reviews of educational research have commonly shown that group work and peer interaction are efficient methods to develop classroom learning (Cohen, Kulik, & Kulik, 1982; Nastasi & Clements, 1991; Rohrbeck, Ginsburg-Block, Fantuzzo & Miller, 2003; Slavin, 1995; Christie *et al.*, 2008). Building up a supportive environment for learning during lessons is essential to good teaching. It is by means of talking over new thoughts with their teachers and peers that students are able to most readily move to new ways of thinking and feeling. Certainly, for most learners the support of a social group is both necessary and beneficial. The term universal knowledge (Edwards and Mercer, 1987; Mercer, 1995) tells us that the construction of knowledge is fundamentally a social process. Anderson *et al.* (1996), Howe *et al.* (1990, 2007) and Tolmie *et al.* (1993) indicate that peer interaction is constructive in enhancing conceptual improvement in learning science, while Christie *et al.* (2008) demonstrate the onward development of peer interaction in the context of collaborative group work. Mercer (1996) argues that classroom talk, by which children become aware of the perspectives their peers and teacher, has been the aim of school-based pedagogical study for more than forty years.



Thus there are clear grounds for holding that the most effective strategy to develop children's critical thinking is to employ peer interaction to enhance argumentative abilities through classroom talk.

To sum up, then, there is substantial interest in Taiwan in improving children's critical thinking skills, and in using more child-centred, dialogic methods to achieve this, but little real progress has been made to date. One problem here may be the use of materials that fit with other aspects of Taiwanese education and culture in imperfect fashion. Globalisation and modernisation have meant that the curriculum has been considerably impacted on by Western concepts, which seem more up to date, but which lack the same degree of implicit cultural resonance as Confucian writing. Reflecting the shift to more child-centred methods, the Ministry of Education has offered Multi-edition Teaching Materials to help develop children's thinking, but these are based on Western methods, including the use of contemporary moral dilemmas to stimulate debate (cf. Lipman, 1977, 2003; Fisher, 1998, 2005a,b; Trickey and Topping, 2004). As well as having a poor fit to teachers' existing practices, materials of this kind may be largely unfamiliar to most children, potentially undermining their ability to engage in productive discussion. The reason for the better outcomes in Hong Kong may be that, due to the particular and 'international' nature of its historical development to this point in time, it had made a greater cultural shift to Western approaches – and maybe that speaking Cantonese, rather than Mandarin it was never so influenced by the same cultural traditions as Taiwan in the first place. The education system in Singapore is without question comprehensively immersed in Western methods, both in schools and in families.

However, this does not mean that more traditional Chinese materials cannot be used in similar fashion, and indeed, in the appropriate type of lesson, they could actually be better, because they have a natural association with the Taiwanese culture in terms of reasoned thinking, particularly as related to morality. As Bahktin (1984, p.6) argues, a text consists of “a plurality of independent and unmerged voices and consciousnesses, a genuine polyphony of fully valid voices”. Some of these voices will be more familiar and more readily identified than others, however, and using texts which play on these greater familiarities may be expected to facilitate learners to a larger extent. One approach to testing this argument is a) to compare the use of Confucian materials as part of dialogic lessons with the more Western materials applied within other research; b) to seek the views of Taiwanese teachers about the use of Confucian materials as part of dialogic teaching, and whether this would be more likely to lead them to explore this shift in practice; and c) to examine whether the hypothetical difference in cultural resonance between Confucian and Western materials is reflected in parental dialogue with children.

### **1.3 Research question**

The central aim of this research is therefore to examine the development of children’s critical thinking within the context of moral reasoning, using materials derived from the classical Chinese *Analects of Confucius* and Western moral dilemma stories as part of peer interactive classroom conversation in primary schools in Taiwan. These two types of material require somewhat different implementations. The sentences in the *Analects* are brief and make use of classical expression, lending themselves most naturally to interventions in which participants read a sentence in the *Analects* and discuss its potential meanings. The Western stories have usually been employed within exercises in which participants read a story and discuss some fundamental

questions related to it. Beyond these variations, however, the structure of the interventions will be kept as similar as possible, to facilitate comparison. Teacher's perspectives about the exploitation of either the traditional *Analects of Confucius* or Western moral dilemma stories within dialogic teaching will also be examined. In addition, the study will investigate whether aphoristic expressions derived from Confucius and ethical dilemmas feature differently in parental conversations with children. Hypotheses relating to these three aspects of the research will be outlined in chapters that follow. The principal research questions are as below:

- 1) How effective is dialogic teaching in improving Taiwanese primary school children's critical thinking in the context of moral reasoning?
- 2) Do dialogic lessons using the *Analects* differ in their effectiveness from those employing 'moral dilemma' scenarios?
- 3) Do any effects relating to 1) and 2) vary according to age group?
- 4) Is there any evidence to support the argument that the *Analects* represent more culturally embedded materials for Taiwanese children?
- 5) What reasons do teachers offer for the poor take-up of dialogic teaching in Taiwanese schools?
- 6) Do teachers perceive the *Analects* as offering a potentially more useful resource for dialogic teaching?

#### **1.4 Research design**

This research is focused a theoretically-informed empirical study. McCall (1994) declares that a scientific study of children requires two conceptual stages: theoretical and empirical. The theoretical stage, which involves deduction, concerns universal concepts, principles, rules, and hypothesised associations, whereas the empirical

stage, which involves induction, is about transferring those concepts into measurable variables, and conducting observations which test and attempt to explain the hypothesised relationships. The present research integrates the theoretical and empirical stages.

In terms of the theoretical stage, the development of children's moral reasoning and critical thinking, and the potential role within this of peer-interactional and classroom conversation is considered using a variety of theoretical frameworks. The use of philosophical moral materials within classroom conversation to develop children's critical thinking (Fisher, 2005) is examined, with specific attention to *Stories for thinking* (Fisher, 1996), a resource aimed at developing the thinking ability of primary-aged children. The contrasting claims of the *Analects of Confucius* to use philosophy to conduct people's moral education (Kim, 2003) are also considered. In terms of dialogic process, particular attention is given to Vygotsky's concept of the Zone of Proximal Development (ZPD) (Vygotsky, 1978), which holds that problem solving which is beyond an individual's solo efforts can be attained with support. Similarly, the significance of communication skills as fundamental for effective group work is stressed by Mercer (1995, 1996) who differentiates three approaches of talking and thinking which correlate to peer activity in classrooms:

- (1) *disputational talk, which tends to be individualised, competitive rather than cooperative, emphasising disagreement*
- (2) *cumulative talk, which is more constructive, aimed at building 'common knowledge', largely by means of repetition and elaboration, but without critical engagement*
- (3) *exploratory talk, which entails the exchange of ideas, explanations, and where appropriate, criticism, leading to the possibility of a joint*

*construction of new knowledge*

(p. 141, cited in Christie et. al., 2008)

These theories together provide the grounding used in this research in order to develop methods of helping children engage in exploratory talk (Mercer, 1996). They entail assisting children's acquisition of the necessary ability to collaborate with peers in conversation in order to develop their moral reasoning toward more consistent critical thinking – a process in which teachers play an important role, by supporting pupils' interactive dialogues and stopping incapacitating procedures (Webb, 2009).

With respect to the empirical stage, the perspective adopted is that of realism, which is pluralistic with respect to methodologies and theories, and therefore provides a good basis from which to implement integrated mixed-methods research and data triangulation. Understanding is increased by examining the differences between, for instance, what is self-evident in interviews, what is highlighted by lay discourse, what presents as generally true in surveys, and what contrasts emerge when comparing all these with official interpretations of the same thing (Olsen, 2004). Eisner (1981) depicts very influentially the potential of complementary viewpoints in qualitative and quantitative research. To illustrate an instance, what do we find out about the circumstances of learning disabled children from quantitative studies – as compared to what we get while reading Peter Härtling's novel about little Hirbel? But what significance has understanding into this child's fate without a reliable foundation for conclusions in other cases? Quantity per se is ineffective, quality per se has no consequences. Research in "applied disciplines" like education or educational psychology depends on intelligent complementation of qualitative approaches by quantitative findings, and vice versa.

Thus, this study conducted dialogic teaching with children in the classroom. It applied both quantitative and qualitative methods, including conversational analysis, assessment of a written essay individually produced by children in the participant classes, and interviews with teachers in primary schools in Taiwan. The qualitative methods focused in particular on the conversations with children and the interviews with teachers. Quantitative methods employed involved the scores of pupils' first language achievement and a survey of parents, as well as the application of content analysis and dialogic coding to classroom talk and written essays, to evaluate the frequency of different codes and generate summary measurements.

The central element of the research employed a quasi-experimental design. Dialogic teaching applying the *Analects of Confucius* and moral dilemma stories to develop exploratory talk and critical thinking in the context of moral reasoning was implemented with three age groups (7 to 8, 9 to 10, and 11 to 12 year olds) within a Taiwanese elementary school. One class in each age group was assigned to the intervention using the *Analects*, a second to the intervention using the moral dilemma stories, and a third to a control condition which received no intervention. In addition, language data were employed to check correspondence among conditions. Written essays were used as a post-test to investigate the effects of the interventions. These required the participants to reflect on either an *Analects* or a moral dilemma (half the children in each condition were assigned to one, and the remaining half to the other).

A survey was undertaken with a group of parents whose children attended the school, in order to ascertain whether the theoretical difference between the *Analects* and the moral dilemmas in cultural resonance is actually evidenced in parental conversation with children. The interview was applied to evaluate teachers' perspectives on

whether dialogic teaching is capable of being used in Taiwanese primary schools to effectively enhance Taiwanese children's moral reasoning and critical thinking; and whether the materials used would make a difference.

The researcher's role was that of teacher-researcher, who designed and conducted the interventions with pupils in the classroom, as well as assessing their post-intervention essays, collecting children's language achievement scores from the midterm examination, interviewing teachers, and conducting the survey with parents.

The empirical work was divided into two stages, the first of which was a pilot study, which was conducted in a public elementary school in Taoyuan, Taiwan. The researcher designed and delivered dialogic lessons using the *Analects of Confucius* in three different year-group classes. Four teachers in this school were interviewed about the concept of Western educational theory and its impact on Taiwanese education, the teaching and learning of the *Analects of Confucius*, and the development of children's critical thinking in Taiwanese primary schools. The aim of this pilot study was to examine the feasibility of the intervention design, including the methods of qualitative and quantitative data collection.

Stage two, the main study itself, was implemented in a public elementary school in Tainan, Taiwan. The researcher delivered an extended comparative intervention across six classes of Taiwanese children, involving two types of experimental group. Two classes of each of the same age groups as the pilot study were engaged in dialogic teaching over a 12 week period, but using different materials, either the *Analects* or moral dilemma stories. Three further classes served as control groups, one at each age level, who followed the regular curriculum without dialogic teaching intervention.

Both interventions applied Mercer's theory, Argument Schema theory (Anderson *et al.*, 2001), and Collaborative Reasoning (Waggoner, Chinn, Yi, & Anderson, 1995; Anderson, Chinn, Waggoner, & Nguyen, 1998) to promote and develop children's classroom conversation.

### 1.5 Significance of the study

This research addresses some crucial concerns, the first of which is that Taiwanese children have poor ability to reason, according to a report by PIRLS 2006, and applying philosophy is considered to be an effective method to cultivate children's reasoning.

Fisher (2008a: 101) states the following:

*"Kant said, 'Philosophical knowledge is the knowledge gained by reason from concepts' (Kant, 1781). Philosophy involves questioning and speculating (creative thinking), generating and building on ideas, posing hypotheses, applying imagination, making links to new ideas and reflecting on alternative possibilities ('possibility thinking'). It involves discovering or inventing relationships between ideas, reasoning to test the validity of these, and 'thinking-outside-the-box' about what might exist beyond the given."*

Thus, the concept of employing philosophy to enhance children's moral reasoning and critical thinking aims to improve Taiwanese children's inferential ability.

Secondly, the content of the traditional Chinese *Analects of Confucius* and Western philosophical moral dilemma stories is different. The *Analects of Confucius* is a classical Chinese book which contains many brief accounts, such as analogies and aphorisms, to describe ideas. Children discussed the meaning behind the analogy and



aphorism in terms of words, photos, and stories. The content of Western philosophical moral dilemma stories is also educational and meaningful and the children discussed some big questions in terms of the content, but it was hypothesised that the *Analects* would provide a more productive context for the development of children's critical thinking and moral reasoning because of their greater cultural resonance. The comparison between the lessons of the classical Chinese *Analects of Confucius* and Western moral dilemma stories made it possible to test this hypothesis. It also made it possible to assess whether dialogic interventions can in general be used to promote the growth of Taiwanese children's discursive skills over time and across the primary school age range.

Finally, it examined in more detail the constraints on the employment of dialogic teaching in Taiwanese schools, and how its introduction might be better assisted. These are the crucial elements of this research.

### **1.6 Outline and structure of the thesis**

The framework of the remaining chapters which make up this thesis is presented below.

Chapter 2 presents the historical background of Taiwanese education; how Western concepts (e.g. John Dewey's theory) and social evolution (e.g. the DPP and the KMT's rule) impacted on Taiwanese basic education; the situation of dialogic teaching in Taiwanese education; and the status of education about the traditions of Confucius, including the history of Confucianism, Confucian instruction in Taiwan, and the knowledge contained in the *Analects of Confucius*.

Chapter 3 examines the development of children's critical thinking in middle childhood; the relationship between moral reasoning and critical thinking; the application of philosophy to cultivate a child's thinking and conversation; and the connection of the *Analects of Confucius* and Western moral dilemma stories with group dialogue to enhance a child's critical thinking.

Chapter 4 outlines the methodology underpinning this research design and approach, and provides summary detail of its context, participants, conduct, as well as data collection, management and analysis procedures.

Chapter 5 discusses the pilot study in which the lessons of the *Analects of Confucius* were implemented in classrooms in the elementary school in Taoyuan, Taiwan. The procedure of the pilot data collection is outlined in this chapter, as well as the analysis of the pilot data, including classroom talk and teachers' interviews. It concludes by considering the lessons learned for the conduct of the main study.

Chapter 6 describes the design, sample and materials employed in the main study, which was conducted in the primary school in Tainan, Taiwan. Two types of intervention were implemented across six experimental classes. One consisted of the lessons using the *Analects of Confucius*, and the other the lessons using Western moral dilemma stories. The effects of the interventions were compared using a post-test essay exercise which was completed by pupils in the experimental classes and by those in comparable control classes. In addition, a survey of parents of participating children was conducted in order to establish how far conversations about moral issues take place within the home, and whether these make use of Confucian epithets or scenarios similar to those used in the moral dilemma stories. Further teacher

interviews were also carried out.

Chapter 7 describes the method of analysis applied to data from the parents' survey in the main study, and the results obtained from this.

Chapter 8 presents the findings of the main study in relation to the dialogic teaching interventions, focusing on the consequences of the interventions for group and class dialogue, and performance at post-test.

Chapter 9 describes the analysis of the teacher interviews in the main study.

Chapter 10 consists of a discussion of the results and their theoretical implications. The main findings of the study are summarised, and assessed in relation to the research questions. The implications of the results for methods of developing children's critical thinking and moral reasoning both in Taiwan and more widely are then considered. In addition, this chapter provides a reflective critique of the research as conducted, together with recommendations for future research.

## **Chapter 2: Confucian Education and the Development of Taiwanese Education**

### **2.1 Introduction**

The aim of this chapter is to explore two key aspects of the background to this research: 1) the significance of Confucian education and the *Analects of Confucius*, and 2) the development of Taiwanese education as a distinct system, including the historical influence of traditional Confucianism, the process of social evolution, and the perceived role of dialogic teaching in contemporary Taiwan.

Confucius could be called both the inventor and the preserver of Chinese civilisation. Confucianism has been developed for over 2,000 years and the fundamental Chinese cultural heritage is encapsulated in its system. It has continually absorbed and assimilated information from alien systems, so forming what is maintained today as Chinese culture, which not only contains traditional Chinese beliefs but also the earlier products of Westernisation. Today, however, Confucianism is challenged by huge rivals in the form of contemporary Western ideas and ways of life, and a new society produced by the industrial age. Whilst displaying to the world, on the one hand, Confucius' perspective regarding the moral stances necessary to resolve its problems and preserving the original meanings of these, it seems on the other hand as if it is necessary to re-interpret Confucian ideas in relation to present-day language. Despite this, though, Confucianism can still be seen as allowing an enquiry into the dynamic interaction of intellectual, social, political and economic flows in Taiwan, with specific attention to the cultural implications of the growth of industry: because Confucianism is so robust and adaptable, it remains capable of absorbing Western influences and offering a distinctive cultural continuity. Confucianism encompasses

self-cultivation, regulation of the family, social civility, moral education, the well-being of the people, the rule of the country, and worldwide peace, and so offers a universal framework for cooperative endeavour (Tu, 1996). Since Confucianism has been such a profound influence on education in Taiwan, despite current challenges, the development of Taiwanese basic education, what Confucianism is and how Confucian education is rooted in Taiwan, and the content of one of the classical Confucian books, the *Analects of Confucius*, will all be explored in the following sections of this chapter.

It should also be noted here that at the root of this concern with the past and present role of Confucianism is a bigger issue. It is said that “education not only responds and changes to society; once shaped, it returns upon it and proceeds upon it” (Curran, 2005, p.3). In other words, education both reflects culture and is part of the process of developing it. The debate over whether or not Confucian teaching still has a role in contemporary Taiwanese education therefore goes to the heart of wider concerns about the balance between cultural continuity and cultural change: it is education more than anything else that provides a society with the tools for striking that balance in effective fashion. This notion of a tension between different cultural influences and the issue of how education might help address it within a Taiwanese context will be recurrent themes within this thesis.

In preparing this chapter on Taiwanese education, values and history, a conscious endeavour was made to illustrate the traits of Taiwanese cultural life, and to deliberate upon other characteristics of Taiwanese society which have built up the uniqueness of its educational process. In considering current issues regarding contemporary education in Taiwan, it is essential to present the historical and social context in which

those issues arise. Confucianism was originally the main educational belief in Taiwan. However, traditional education was affected by numerous social evolutions, and Taiwanese society produced diverse developments, which resulted in distinctive educational principles. These processes produced the tensions which led to the questions underpinning this research. First and foremost, there were international influences and historical social interplays in educational development, the formation of contemporary basic education, and the modernisation of primary school education. In particular, the most prominent phenomenon in Taiwan in the twentieth century was the impact of Western educational ideas, and the concept of dialogic teaching has particularly influenced the specification of basic education in the 'Grades 1-9 curriculum' (MOE, 2000). However, it has been difficult to implement this Western teaching into basic education because of inherent cultural conflicts. It is the effort to find a way out of this impasse that has been the overriding motivation for the present research.

## **2.2 Confucian Education**

Taiwanese education was derived from Confucian Education, and although the educational curriculum has been changed by political evolution in Taiwan, it cannot be denied that traditional Chinese Confucian culture has had a profound influence on Taiwanese education. Therefore, the following discussion demonstrates the historical development of Confucian education in both mainland China and in Taiwan itself.

### ***2.2.1 What is Confucianism?***

When viewing the dimensions of the writings about China and its culture, it is evident that this enormous subject cannot be discussed in any depth without referring to Confucian ideas and values. It is important to start by noting that Confucianism has

been accorded several meanings. For example, Berthrong (2008, p.2) asserts that Confucianism, as an English word used to represent a specific tradition, owes an understandable liability to the constraints of Western terminology and worldviews. This is evident in the writings of well-known Scottish missionary and pioneering Sinologist, James Legge (1815-97), whose significant definition of Confucianism identified it as being the “first of all the ancient religions of China, and then the views the great philosopher himself ... much as when we comprehend under Christianity the records and teachings of the Old Testaments as well as those of the New” despite the fact that these exhibit substantial dislocations and differences as well as continuities.

Moreover, Smith (1991) affirms that Confucianism is able to be properly defined as humanism, which means that the educational writings of Confucius, and his other philosophical exploration, focus on assured human values. Confucianism keeps away from metaphysics and focuses on the value of human relationships. It was the sage’s view that one should first be a good son or daughter, a good brother or sister, a good parent, a good friend, and an honest and humane leader, then “if you have any energy left after attending to conduct, study books.” Consequently, it is a study of human relationships, proper behaviour, respect, and honour, which can cultivate peace, harmony, and happiness in society. Reasonableness may be the best word to display how Confucius advised people to interact. Confucianism proposes that the highest aim of a person should be to live a moral life, and that all other activities underlie this. Also, this morality which rises above all other aspects of the human spirit can only be attained by education and cultural consciousness, and by a sense of ethical rulings learned through the development of ritual, poetry, and music.

During the Ming Dynasty, when Confucianism developed into Neo-Confucianism,

specifically in Wang Yangming's Neo-Confucianism school, it experienced an immense change – a change to placing an emphasis on day-to-day life. Confucian learning was never merely amassing information but was for the sake of and informed by daily practice. Confucian texts were guides to living, and they needed to be “understood” by putting them into daily practice. Daily life is shift. People must practice Confucian theories, such as filial piety, benevolence, propriety, etc. in real life before they can be said to know them. For instance, only after one has experienced cold or hunger can one know them. Wang Yangming said, “The pursuit of conscience is never parted from every life.” The Yangming School in Taizhou stated a well-known thought: “Everyone on the street is a sage” (as cited in Yu, 1998, p.245). The Neo-Confucian vision cannot be recognised as an individualistic version of secular humanism, because it is not only about the anthropocentric. Instead, it starts with what is common to all of us – the simple fact of our existence (Foster, 2008). As Tu Wei-ming, a modern Confucian, states, however, “the paradigmatic living example is not a mere creature but is in fact a co-creator of the world in which we live, a guardian of the natural process, and indeed, a participant of the creative transformation of Heaven and Earth. The question of the ultimate meaning of human existence, in light of the age-old belief that ‘it is the human that can make the Way great and not the Way that can make the human great’, is thus an anthropocosmic question.” (Tu, 1989, pp.139-40). It is this combination of the practical, the religious and the metaphysical that has made Confucianism such a powerful and lasting system of thought – and one which has the process of *genuine* learning at its core.

### 2.2.2 Confucius and education

Although Confucian educational concepts are too profound to present an in-depth survey here, some parts of Confucius's educational concept can be explored.



Berthrong (2008) avers that Kongzi (Latinised as “Confucius”) simply transmitted the teachings of the sages of the past and did not make any type of new or personal teaching. He experienced great delight in learning about ancient times, by which he represented the history, customs, and literature of the Zhou dynasty (twelfth through third centuries B.C.E), which he presumed to preserve the best of the wisdom of earlier sages and kingdoms. From his perspective, and there is no reason to doubt his sincerity, he was revitalising the teaching of the Zhou dynasty creator to re-establish culture during the disturbed times of the *Chunqiu* (Spring and Autumn) period (722-481 B.C.E). The most common expression for someone like Master Kong (Kongzi) was *Ru* • ; a word which defined a scholar or intellectual in ritual.

Wang and Ma (2006) declare that Confucius spent over 40 years dedicating his whole life to education with a “tireless zeal (• • • • *hui ren bu juan*)” (on Transmitting 7.2). Not only did Confucius build up the school of Confucianism, but he also proposed a set of fundamental educational concepts and theories 2500 years ago, such as “education should be done without a difference between the rich and the poor, or the noble and the mean”, “carrying out teaching strategies in accordance with their aptitude”, “combining learning with contemplation”, “teaching with skill and patience”, “teaching benefits teachers as well as students”. In addition to these invaluable educational concepts and principles, Confucius’ teaching approach, teaching tactics, and the equally respected interaction between teachers and students endorsed by him are still greatly impressive and are considered to have vast meaning today. Also, Confucius changed historical trends to establish the first private school in spite of “tremendous hardships and obstacles”, and afterward “plenty of students came to learn from him from different places” (p.17). Indeed, this laid the foundation for setting up private schooling on an enormous scale, and changed the tradition that

“only governmental officials could obtain education” and broke slave owners’ monopoly and rule over education, wisdom and classical works, as well as highlighting a new way to popularise education to the caste of “*shuren*” • • • (lower class). This private schooling became more and more popular among all citizens, and it has lasted for more than 2000 years in China and Taiwan, promoting a great variety of talents.

There is in fact no dependable evidence to indicate that the work associated with him was written by Confucius himself. However, it is universally agreed amongst historians that Confucius’s philosophic and educational thoughts are recorded in, amongst others, the so called “Four books”, namely the *Analects of Confucius* (*Lunyu*), the *Book of Mencius* (*Mengzi*), the *Great Learning* (*Daxue*), and the *Doctrine of the Mean* (*Zhongyong*). From the earliest times of Chinese society to the early twentieth century, these four classics were adopted, along with textbooks, for those who prepared to take the imperial examination which chose officials for the imperial administration. Of these books, the *Analects*, a book compiled by his disciples after his death, is a compilation of talks with Confucius, including many of his most crucial sayings, and contemporary historians agree that the *Analects* is the most reliable source of his statements and activities (Shen, 2001).

Confucius’s educational ideas can be found in the *Analects*. Lee (2000) quotes a Confucian educational thought, “In old days men studied for the sake of one’s own self; nowadays it is for the sake of [showing off to] others”, and this prominent sentence, known to generations of pupils, best sums up the educational ideals of conventional Chinese culture. Found in the *Analects* (*Lun-Yü*), the statement expressively describes the purpose of education, which is that education is meaningful

as the individual development of one's own self. Although the *Analects* is mainly concerned with moral advancement, the obvious hint is that learning can also be pleasant. Either way, Confucian teaching is centred on personal enhancement, rather than on its helpfulness for acquiring recognition or benefitting one's self. Shen (2001) states that there are numerous texts about his thoughts and jointed teaching approach and instructional content. Confucius concentrated on pupils' personal characteristics, and in the *Analects* it is described that Confucius observed his students' personal distinctions and suggested that they were suited for different sorts of works. In his own words, "To people above average, one can impart higher things; to people below average, one cannot impart higher things." Also, Confucius anticipated that his students would be motivated and active learners. In his words, "No vexation, no enlightenment; no anxiety, no illumination; if I have raised one corner and he does not return with the other three, I will not replicate." Accordingly, Confucius advocated his pupils to take this idea in learning. They should be keen on, and devoted to, learning. When pupils were taught something, they were required to draw relevant presumptions from it.

Confucius categorised six sections of a form of curriculum for teaching, and Wang and Ma (2006) affirm that he thoroughly reformed and edited some ancient regulations and classics for the rationale of teaching. For instance, *Liu Jing*, containing six sections of *Poems*, *Calligraphy*, *Rites*, *Music*, *Yi*, *the Spring and Autumn Annals*, became the textbooks of six corresponding courses, which were widely employed for quite a long period in feudal society. Thus Confucius, as the editor of textbooks at that point, had made a contribution to preserving the ancient classics and developing ancient Chinese culture.

Additionally, Lee (2000) asserts that Confucian education encompassed the objective acquisition of the so-called “six arts”: rites, music, archery, charioteering (or chivalry), writing, and mathematics (arithmetic). The specific subjects of the “six arts” may seem narrow from a modern perspective, and yet the history of classical learning and the hermeneutic tradition has spread the original Confucian aim, and his thoughts are regarded as normative. Certainly, it is evident that the purpose of education has always been to be unlimited in mastering the practice of the “six arts,” such as how to shoot or steer a chariot, and not only to memorise poems. The significant point is that pupils should search tirelessly to comprehend knowledge, and apply it to assist integration with the highest ideals of humanity. In doing this, they would then be happy in the world of human affairs, and take part in the moral exercise of acquiring unity with the cosmic *tao* (way).

### 2.2.3 *The Analects of Confucius*

As noted above, *Lun-Yu* (*The Analects*) is one of the Four Books. Waley (1989) argues that there is no reason to doubt that *Lun-Yu* (*Analects*, to employ the English corresponding term as translated by Legge) means ‘Selected Sayings’. Confucius portrayed himself as a spreader, not a creator, and took the existence of rhyme or antiquated formulae, or of recognisable shapes in the sayings, and repeatedly accurately stamped them as being inherited from ancient times. Chen (2006) states that the contents of the *Analects* comprising 20 chapters and 492 sections are not arranged in any fixed order. *Lun*, a term associated with the editing of documents, certainly takes place in the *Analects*, 14, since the content of the book was compiled by Confucius’s disciples after the Master’s death (Waley, 1989; Chen 2006).

Muller (2000) points out that there are chapters in the *Analects* in which the most

significant point of reference may change in certain situations. For example, when Confucius says “filial piety (*xiao* • 孝) is the great root of heaven and earth”, he is describing filial piety as being something comparatively fundamental. This could similarly be said, in terms of the situation, of the ideas of “righteousness” (*yi* • 義), “wisdom” (*zhi* • 智) and “propriety” (*li* • 禮). There is no fixed and absolute “essence” of original Chinese philosophy in the Platonic sense, and so, no such concept exists in the *Analects*. However, there is one notion which shows its comparative “essentiality”, acting as the most primary foundation for all figures of virtuous behaviour and qualities, and this is the concept of *ren* (• 仁). Interpreters of the Chinese classics have always had difficulty in producing an appropriate English description of this term, since counterparts such as “benevolence,” “humanity” and “altruism” are too restricted in range to display the breadth and depth of the implication of the expression as it is applied in these texts. In the Confucian classics, it is not only a shape of warm-heartedness, but also describes an instinctive capability of human minds to act as the foundation of all altruistic motivations and capabilities of rational and psychic development.

As for central concepts of the *Analects*, Chen (2006) declares that Confucius’s ideas are focused on the notion of “benevolence/humanity”. For example, political ideas promote control by virtue, educating and legalising the people through education and rites/propriety, and the sovereigns must be honourable in word and deed, and understand how to promote moral man so as to earn well-liked trust. Educational ideas propose that equal policies should be obeyed in education, pledging education for everyone, and that teaching approaches and content need to be acceptable for various students with a stress on revering different personalities. Ethical ideas assert that filial piety is the essential dogma of benevolence, which can be expanded to other

virtues. Filial piety does not merely mean respect for the economic condition of one's parents. It also entails the possession of a truthful, deferential and appreciative mind. In his ideas on material wealth, Confucius did not dispute the quest for substance. However, he advocated that wealth should be achieved by a justifiable approach, and said that affluence obtained by illegal means is similar to fleeting clouds. A man of benevolence and virtue can keep his mind uninterrupted by either poor quality or wealth.

Additionally, Chen (2006) claims that the "ideal personality" is exhibited in the *Analects*. Confucius described an ideal personality as "a gentleman", in whom benevolence/humanity, justice, and morality are intense, and "the petty man" of contemptible moral qualities is pitted against this gentleman. For instance, the gentleman looks for justice while the petty man chases profit, the gentleman is generous while the petty man is constantly full of anxiety, the gentleman looks for harmony rather than conspiracy while the petty man turns to conspiracy instead of harmony, the gentleman assists others to achieve their targets while the petty man leads others off target, the gentleman is severe with himself while the petty man is severe with others, and the gentleman can live with poverty but still obey the Way (*Dao* • 道) while the petty man performs unwisely against the law when he finds himself in poor circumstances.

Chen (2006) points out the value of the *Analects*. Although Confucius lived more than 2000 years ago, many of the concepts and knowledge contained in the *Analects* are as applicable today as they were then. These values can be described in four parts, the first of which is education for personality. Several educational institutes have become aware that only delivering knowledge does not establish an unassailable education,

but that education is also very significant for cultivating personality. Confucius employed a heuristic approach to education to develop his students' capacity to think autonomously. Also, he regulated his teaching approaches to the brightness of the pupils' different personalities and levels of aptitude. He encouraged his pupils to think, observe and study more, as well as advising them to guard their words and actions, and scrutinise themselves in order to cultivate benevolence. Thus, Confucius encouraged his students not only to continuously learn knowledge, but also to simultaneously and independently think in-depth in terms of morals. This approach to developing individual pupil's thinking skills can be seen as a form of critical thinking based on morality.

Secondly, Confucius stressed the significance of the self's relationship with the community. Leaders, bureaucrats, parents and children are expected to truly carry out their responsibilities, since this is the root condition for retaining social order. People should treat one another with sincerity and faith, and be understanding of each other. "What you do not want done to yourself, do not do to others." In this way, a well-balanced relationship can be attained between the self and the community, and social order can thus be maintained.

Thirdly, contemporary society focuses much on leadership training and many books are currently being written about this issue when, in fact, the *Analects* can be a practical guide for this. Confucius proposed that the most essential quality to be expected of a leader is "correct personal conduct." Confucius said: "When a prince's personal conduct is correct, his government is effective without the issuing of orders. If his personal conduct is not correct, he may issue orders, but they will not be followed." A leader cannot influence and persuade others unless he establishes

himself as a role model.

Lastly, in terms of the method of running the affairs of state and conveying peace to the people, Confucius regards well-liked trust as being the stake of state government. A state cannot be well administered without the well-liked trust of the people, but with it, it can be efficiently supervised, assist people to become prosperous, and help to educate them. These dogmas for state government are still applicable today.

In the *Analects*, many particular and replicated key words in Confucius's sayings represent profound meanings from antiquity. Chen (2006) and Waley (1989) describe some characteristically essential words as follows:

*Ren* • • is “Benevolence and Humanity”. The Chinese character for benevolence (• ) is made of a left “• • (*ren*, man)” and a right “• • (*er*, two)”, implicating a relationship between two men. It indicates interpersonal love and ordinary care. It also means ‘good’ in a very widespread and common sense. ‘In its direction’ refers to altruism and a capacity to evaluate other people’s sentiments by one’s own. The good man is ‘in private life, well-mannered; in public life, hard-working; in relationships, faithful.’ Righteousness (on the part of a ruler) is a ritual of thorough obedience. The good do not suffer and are essentially courageous.

Confucius said: “A man without virtue cannot endure adversity nor enjoy prosperity for long. A man of virtue rests content in virtue; a man of wisdom knows the way to gain the benefits of virtue. (*Bu re zhe, bu ke yi jiu chu yue, bu ke yi chang chu le. Ren zhe an re, zhi zhe li ren.*) (On virtue 4.2)



*De* • • relates closely to the Latin *virtus*. It signifies, just as *virtus* does, the explicit quality or ‘*virtue*’ underlying anything. Virtue has never had the connotation of being the opposite of vice in Chinese, but rather ‘virtue’ is implied in such terms as ‘in virtue of’ or ‘the virtue of this drug’. Individually, it is a vigour or power close in proximity to what is called ‘character’ and usually contrasts with *li*, ‘physical force’.

Confucius said: “The gentleman cherishes virtue, but the petty man cherishes his own home. A gentleman is concerned about law and justice, but the petty man is only preoccupied with self-interest. (*Jun zi huai de, xiao ren huai tu. Jun zi huai xing, xiao ren ua hui.*) (On Virtue 4.11)

*Yi* • • is the traditional Chinese character for “justice”, which consists of an upper “• • (yang, sheep)” and a lower “• • (wo, I).” In the lower section a hand is seen, holding a dagger. Hence, the character means that the tender sheep can defeat the violent “I”. Also, this implies the meaning that personal awareness comes after ethical principles. Confucius believed that a gentleman should regard justice as an essential dogma. It is a symbol of required courage if justice is identified, but not advocated and advanced. Prosperity and class is what people desire. Nevertheless, these should be primarily determined by the criterion of justice. Prosperity and class obtained in an illegal way are worth nothing.

Confucius: “The gentleman considers righteousness; the petty man considers only gain.” (*Jun zi yu yu yi, xiao ren yu yu li.*)” (On virtue 4.16)

*Li* • • translates closely as “Propriety or Rites” which contains two pieces, one of

which is a jade stone (yu, 玉) placed in a propriety container (dou, 豆). This implies that grave ceremonies are guided to pray for heavenly blessings, and several other expressions such as polite, reverential, and rituals, originate from this. In antiquity, rites were a very crucial field of learning as one of the six arts: propriety (rites), music, archery, chariot-riding, calligraphy and arithmetic. Propriety does not indicate outward regulations like etiquette. Confucius thought of rites as being the purpose of rules for presenting benevolent actions. Abstinence and profit to propriety are done for the sake of benevolence. Do not watch, listen to, grumble about, or do what goes against rites. Thus, the world will return to the circumstance of benevolence.

Confucius said: “To be able to overcome your desire and observe the rites in living; this is benevolence. Do not look at anything that does not accord with the rites. Do not listen to anything that does not accord with the rites. Do not say anything that does not accord with the rites. Do not do anything that does not accord with the rites. (*Ke ji fu li wen ren, fei li wu shi, fei li wu ting, fei li wu yan, fei li wu do.*)” (On Yan Yuan 12.1)

*Zhi* (智) ; as knowing, means “realising and obtaining knowledge”. In the *Analects*, knowing can also mean “intellect (wisdom)”, such as “A wise man will not be cheated” and “A wise man knows how to gain the benefits of virtue.” In fact, these two explanations are compactly correlated. Confucius said: “When you know something admit that you know it; and when you do not know something, admit that you do not know it; that is knowledge.” (Chen, 2006: 21) Confucius judges that a person should not be in a hurry to conclude anything before conducting an investigation. He ought to listen to what another person says and observe what he does so as to see if he can harmonise his actions with his words.

Confucius said: “Those people who have knowledge cannot be compared with those people who love knowledge. But even those people who love knowledge cannot compare with those people who delight in knowledge. (*zhi zhi zhe bur u hao zhi zhe, hao zhi zhe bur u le zhi zhe.*) (About Young Ye 6.20)

*Xin* • • means “Trust”, and the complex Chinese character for trust is composed of two parts, one of which is • • (*ren*, human being), and the other is • • (*yan*, speech). In early Chinese, *Xin* always refers to keeping pledges, submitting undertakings. A person cannot present creditability and trust if he does not pay tribute to his words and back them up with actions. He did not believe that a person without trust could obtain a foothold in society, and says that this is similar to a big carriage without a crossbar trying to control an ox, or a small wagon without a crossbar being used to yoke a horse. How can such carriages move? An honest person who respects his words can live with people no matter where he goes.

Zeng Zi said: “Daily, I examine myself in three areas. Have I done my best when doing things for others? Have I been trustworthy in my dealings with my friends? Have I revised the lessons I have been taught? (*Wu ri san xing wu shen: wei ren mou er bu zhong hu? Yu peng you jiao er bu xin hu? Chuan bu xi hu?*) (On learning 1.4)

*Zhong* • • is “Loyalty”. Graphically, the upper part of the traditional Chinese character for *Zhong* • • is formed as an arrow lodged in the centre of the aim. The lower part is

shaped like a “heart”. Thus, *zhong* represents an honest and fair heart. Confucius educated his pupils from the four viewpoints of “the classics, practice, loyalty and trust”. He underlined the fact that people’s personal manner should be conducted by the dogmas of loyalty and trust. They must do their best for others, particularly their leaders and superiors, and since loyalty is based on honesty, people should speak forthrightly when required. No selfish affects any fears. Being loyal or trustworthy to someone does not mean that their wishes should be obeyed in everything. It may also be necessary to educate and give them an honest opinion. However, frank words are not pleasant to hear, and if they repudiate our advice, we should not stay resolute or we will make trouble for ourselves.

Zi Gong asked about friendship. Confucius said: “Faithfully admonish your friends if they have done something wrong, and lead them gently to what is right. If they do not listen, do not go on. Don’t humiliate yourself. (*Zhong gao er shan dao zhi, bu ke ze zhi, wu zi ru yan.*)” (On Yan Yuan 12.23)

*Xiao* • • means “Filial Piety”, which is one of the fundamental moral principles. He who looks after his parents and reveres his elder brothers is hardly disobedient in anything. Can we expect an undutiful man to be truthful to his friends or reliable to leaders? Filial piety does not only mean looking after one’s parents. One is also expected to look after one’s dogs and horses at home. Without sincere respect for one’s parents, what is the difference between looking after them and feeding the animals? The filial piety Confucius supported was never an irrational piety. If one’s parents make a mistake, one should remind them of it in a reserved manner. If they do not permit this, one needs to continue to respect them, rather than trigger any anger.

Zi You consulted Confucius about filial piety. Confucius said: “These days, meeting the physical needs of parents is considered filial piety. But even dogs and horses are likewise cared for. What difference is there if one does not show his parents respect? (*Jin zhi xiao zhe, shi wei neng yang. Zhi yu quan ma, jie neng you yang. Bu jing, he yi bie hu?*)” (On Governing 2.7)

*Zheng* • • refers to “Correctness, Propriety, Legality or Rectifying”. In the Analects, *zheng* has another stratum of meaning, which is government. “To govern a state means to correct it.” While the leaders rule the state and the people in a “correct Way”, who urges them to hold to the incorrect way? In order to correct others, one is first required to be correct. If one is right, one does not have to issue orders. If not, the orders issued will not be conformed to. This accurately expresses the meaning of the following Chinese phrase: “When the upper beam is not straight, the lower one will also go aslant.” If those in senior roles establish a good case of being honest and upright, those in subordinate positions will obey them rather than committing all sorts of anger. Social order cannot be kept unless a “correct name” is built up. “Let the ruler be a ruler, the subject a subject, the father a father, and the son a son.” Each person must live, and carry out his responsibilities, according to his or her role. “Without a correct name, your words do not sound reasonable. When your words are not reasonable, you cannot accomplish anything.”

Confucius said: “If the ruler is upright, even if he does not issue orders people will follow him. But if the ruler is corrupt, even if he repeatedly issues orders, people will not follow. (*Qi shen zheng, bu ling er xing; qi*

*shen bu zeng, sui ling bu cong.*)” (On ZiLu 13.6)

*Xue* • is “Learning”, which is not limited to ancient classics and books, but also refers to learning from other people. “When I am travelling with two men, I can surely find one of them worthy of being my teacher.” We have to learn from others’ constructive advantages, and learn from their destructive disadvantages. Thus, studying is innately present everywhere in our lives. How are we supposed to study? We must keep our ears and eyes open, and work hard to enlarge our vision. Also, we must review what we have studied from time to time so as to receive a better understanding of the acquired knowledge and expand new insights. Furthermore, it is significant to join studying and thinking, since we will become puzzled if we learn without thinking. Likewise, it is helpful to make a fuss of baseless and unwarranted contemplation. Studying in itself is a pleasurable thing, but that is not its eventual aim. A person who can only recite the content of books will stay as a dumb bookworm if he or she is not aware of how to put what he has learned into practice.

Confucius said: “Reading and studying without thinking is futile labour.

Thinking without reading and studying is perilous. (*xue er bu si ze wang, si er bu xue ze dai*).” (On Governing 2.15) (p. 32)

*Xing* • implies “Action and Practice or Conduct”, which is one of the four dogmas by which Confucius educated his pupils, the other three being culture, loyalty and trust. In terms of *Xing*, Confucius thought that moral cultivation, such as filial piety toward one’s parents, respect of one’s elder brothers and sisters, and truthfulness with one’s friends, were essential. *Xing* comes before culture in Confucius’s perception: “If you have spare energy after attending to [moral] action, you may spend it making

yourself cultured.” He obviously believed that moral education was more significant than studying literature and the arts. Confucius emphasised the fact that one must harmonise one’s words with action, or incorporate one’s knowledge with practice. To him, it is not enough to know a theory. Rather, it is crucial to devote oneself to practicing it. He said: “Regarding moral principles, I do not know more than others. I need to do more in order to become a superior man in practice.” Thus, it is difficult to understand a principle, but it is ever more difficult to practice it.

Confucius said: “Whenever I travel with others, there is always something I can learn from them. By observing them, I would pick out the virtues to emulate and the vices to check myself against. (*San ren xing, bi you wo shi yan. Ze qi shan zhe er cong zhi, qi bu shan zhe er gai zhi.*)” (On transmitting 7.22)

As illustrated above, in general, the *Analects* contain the sayings and dialogues of Confucius and his disciples. The *Analects* underline the moral principles by which to educate people, such as benevolence and humanity, filial piety, righteousness, trust, loyalty, and so on. Confucius educated people, not only to learn knowledge, but also to think in-depth and independently based on morals, to cultivate personal morality. At root then, this is an approach to developing people’s thinking, framed in terms of the development of personal morality.

However, in modern Taiwan, the *Analects of Confucius* has typically been taught by traditional methods, such as memorisation and recitation without explanation, and this is commonly thought to have limited ability to enhance pupils’ thinking. This conventional approach to teaching and learning the *Analects* stands in contrast to their

inherent emphasis on engaging self-aware (i.e., critical) thinking, tailoring teaching to the needs of the learner, and providing guidance via dialogue. As the foregoing illustrates, Confucianism in general, and the *Analects* in particular, do in fact provide a potential platform for a particular form of dialogic teaching and collaborative learning aimed at developing critical thinking via the growth of a culturally embedded moral sensitivity. The contents of the *Analects* can be discussed in terms of each principle of morality by pupils in the classroom. Every single sentence in the *Analects* can be judged and its beliefs or morals argued by means of interactive classroom talk to develop learners' ability to think critically. The following chapter will examine the possibility of combining dialogic teaching with the *Analects* to develop children's thinking. First, though, it is necessary to consider why, if Confucianism has this potential, it has been overlooked or even actively dismissed in the development of contemporary education within Taiwan.

### **2.3 Historical development of the role of Confucianism in Taiwanese education**

In order to understand the development of education in Taiwan, it is useful to go back to the historical evolution of Chinese education from the imperial period up until the emergence of Republican China in the 20<sup>th</sup> century. Chinese history is also Taiwanese history for the most part, and it shares much of the same cultural heritage.

Smith (1991) and Her (1997) mention that the Chinese education has developed over a prolonged history, and has changed somewhat over two thousand years. It is crucial, when discussing education in ancient China, to consider the influence of Confucius. However, Lee (2000) reports that Chinese tradition waned in the face of Western influences in the late 19<sup>th</sup> century, although the heritage neither vanished nor transformed itself at once. Rather, it continued to adapt and to dominate the Chinese



worldview. Therefore, the following account describes three crucial periods, namely traditional Chinese education, Western impact, and education in the early 20<sup>th</sup> century.

### ***2.3.1 Period of traditional Chinese education and its aftermath***

Traditional Chinese education has been defined by various people. Smith (1991) asserts that the Chinese utterance for ‘education’, which is ‘• • •(zhiao-yu)’, can be used to assist developing a focus on what the teaching-learning process means in traditional Chinese culture. Lee (2000) claims that education occupied a central position in Confucian teaching, and in the intellectual history of China. The *Analects* begins with the word, *hsüeh*, which can best be portrayed into English as meaning “learning”. Generally speaking, “learning” is at the heart of Chinese traditional education. Learning in this sense is the educational process which leads to a building up of understanding and knowledge from one generation to the next. This process involves developing new ideas, in and out of the understanding of the old. Therefore, in order to be fully educated, people need to firstly acquire knowledge, and then comprehension.

Confucianism subsequently developed into a study of human relationships and how through appropriate behaviour, respect, and honour, these relationships can make in a society peace, happiness, and harmony. Reasonableness would be the best word to portray how Confucius requires people to interact. The main goal a person can search for is to live a moral life and that all other activities are subsidiary to this. And this morality that goes beyond all other measurements of the human spirit can only be provoked by education and cultural understanding (Smith 1991). Chan (2006) indicates that traditional Confucian values of moral education are meant to guide people to achieve a life which is performed with benevolence and righteousness. For

instance, Confucianism supposes:

*“That moral perfection through self-discipline (xiushen 修身) is that first step toward a series of bigger causes. It stands as the primary step of virtue making followed by family management (qijia 齊家), good governance of the country (zhiguo 治國), and finally pacify 【sic】 the world (pingtianxia 平天下), which would amount to the accomplishment of human being as a moral agent in the Confucian ideal.” (Chan, 2006, p. 9)*

The moral imperative in this sense is that an enlightened man must strengthen and educate himself, in turn supporting his family, and subsequently, extending that support to his country and the world.

Equality appears to be a crucial feature of traditional education. Confucius said: “Teach everyone without discrimination” (*you jiao wu lei*) (cited in Chen, 2006, p.50). People should be able to acquire vast knowledge equally, and not be limited to being a mere utensil for a country. As a result, examinations were drawn by custom in antiquity to ensure that the non-hereditary values idealised by traditional Confucianism became essentials for substantial government posts. Confucianism became embedded in Chinese education because knowledge of Confucius’s ideas was adopted by the imperial dynasties as the basis for assessing the suitability of people for civil service posts. Pepper (1996) claims that this Chinese plan for bureaucratic election has been clarified as being a function of medieval dynastic endeavours to organise central and local government posts. The dynasties needed educated people to

run their government structures, and the writings of Confucius became central to establishing that education because they placed a central value on learning, and so reinforced its importance, whilst also offering a moral vision of an ordered society that made stable government crucial.

In ancient society, therefore, men pursued higher social class by learning the Confucian classics. Chan (2006) declares that most people dreamt of being an official in Chinese pre-modern days, which implied they would become a scholar-official one day. Having come of age, if a man desired to ascend the social hierarchy, despite his family background, the only way was to learn the Confucian Classics and train for the Imperial Civil Service Examinations. The Confucian classics consist of Four Books and Five Classics (*Sì-shū Wǔ-jīng*). Curran (2005) asserts Confucian classics became the standard curriculum, as well as the authorised knowledge for the country, since education was mainly conditioned by the civil service examination. This national public examination for the choice of government officers, called *Ke Ju*, began in China more than 1000 years ago. The candidates would acquire an official position in an authoritative organisation if they could recite the contents accurately during the Examination. Thus, this tradition advanced rote-learning as the greatest approach to teaching and learning. This was a result of the examination process itself i.e., recitation was considered to be an effective and efficient way of establishing that the materials had been learnt. Men were less predisposed to challenge the social reality if they wanted to become prosperous and succeed in their career.

However, the situation changed at the beginning of the 20<sup>th</sup> century following the increasing importance of contact with Western civilization. Although China has since the 16<sup>th</sup> century had continuous connection with the West, it was not until the mid-19<sup>th</sup>

century that China had felt its tradition and civilization was being acutely challenged. During this period of time, when China was faced with the strongest challenge from the West militarily, it was political and economic concerns that provided the greatest test of its cultural viability. Gradually many modern Western ideas were being believed by the Chinese intellectuals and talked about publicly. In one way or another, Chinese intellectuals started to abandon some of the values and practices that had been held precious for centuries, such as the foot-binding of women, inhumane criminal penalties, and even the institution of imperial monarchy. Among all the various changes, education was seen by many as the most likely way to create a new balance. In 1905, educational reform encompassed plans to build a national hierarchical system of schools and terminate the traditional civil service examinations (Chan, 2006). We will return to the impact of this in 2.3.3.

### ***2.3.2 How is Confucianism rooted in Taiwanese education?***

Some scholars believe that all education in Taiwan is derived from Confucian theories, although teachers and students are often unfamiliar with the source (Jin & Cortazzi, 1998; Smith 1991). Wang (2003) asserts that Confucian principles articulate the great value accorded to education by society, the belief that learning includes application and reflection, that hard work can balance a lack of ability, that the teacher is a model of both intellect and ethics, and that learning is a moral obligation and studying hard is an obligation to the family. Lee (1996) claims that contemporary accounts of the cultural perspectives of Chinese learners underline a number of Confucian ideas which have persistent popularity. According to Confucius, education is not only crucial for individual development, but also society needs to teach people to be administrators: “The officer, having discharged all his duties, should devote his leisure to learning. The student having completed his learning should apply himself to

be office” (*Analects*, 19.13), which is a similar belief to that of Plato’s philosopher king, who affirms that the country should be governed by erudite and wise people (Lee, 1996, pp.26-27). This idea has impacted on the traditions of officialdom, as well having continued implications for the concepts of learning and leadership in modern Taiwan.

Confucianism has affected Taiwanese education for more than 2000 years, and Wang and Mao (1996) state that some researchers claim that rote-learning was stressed for centuries, and the entire process of learning was solely prepared for the memorisation of the concepts of ancient time, by way of the *Four Books* and *Five Classics*. This formed the substance of the education which had to be mastered for the Civil Service Examination.

Nine decades have passed since the ending of the Civil Service Examination in 1905, and yet the approach of memorisation is still common with Chinese learners. Guo (1996) asserts that there is still the notion that students should memorise as much knowledge as possible, and that one cannot produce or create until one has built up enough essential knowledge. Gao & Watkins and Kennedy (2002) confirm that several commentators on modern Chinese education complain that learning for exams still largely depends on memorisation. They argue that such exams merely support surface learning – the capacity to simply replicate information without a full comprehension of the meaning, or of how the new knowledge relates to former knowledge. Gao & Watkins (2002) mention that the robust stress on examinations is a known difficulty of the basic education system in China. The examination culture has become an obstacle to creative expression, critical thinking and problem-solving in education, and consequently, in work. Chinese pupils are commonly portrayed as

being diligent and hardworking, yet lacking in creativity. For example, “even though Chinese students do better than Western students in mathematics and science, they are not known for their creativity and original thinking”. (Salili, 1996, p.100)

However, Watkins & Biggs (2001) declare that a specific feature of the “paradox of the Chinese learner” is the connection between memorising and understanding. Chinese pupils are recognised as being passive rote learners, yet they present high levels of understanding. Lee (1996) affirms that contrary to the frequently held judgment that Confucianism underlines rote-learning, memorisation is regarded as being an important division of learning in the Confucian tradition. Nevertheless memorisation should not be confused with rote learning. In other words, memorisation has never been seen as a closing stage in itself, but as a preface to in-depth understanding. Ho *et al.* (1999:48) state that, in circumstances such as preparing for an examination or a performance, “memorising lines or already understood facts may be required to ensure success and is considered to be a deep approach.” Research illustrates that a number of teachers and better pupils do not see memorising and understanding as dividing procedures but rather linking ones, and highly efficient learning effects frequently need both processes (Biggs, 1996; Kember, 1996; Marton *et al.*, 1996; Marton *et al.*, 1997; Watkins, 1996). This idea was adopted by Dahlin and Watkins (2000), and their research on Chinese pupils described a more understandable distinction between the rote learning procedure (mechanical learning without meaning) and replication for the “deep memorisation” of text. Whereas Western pupils commonly perceive understanding as being a process of rapid insight, Chinese pupils usually think of comprehension as a long process which necessitates substantial mental effort (Wang, 2003).

The academic civilisation can be traced back to the Chinese traditions of reverence, power, and status. Bond (1996) claims that, according to Confucian rules of social manners, *Wu Lun* (the five cardinal relationships), children are educated to have reverence for age and order – for parents, elders and ancestors. Zhou (1988) avows that teachers were conventionally listed with the five types of those most respected by Chinese society: “the God of Heaven, the God of the Earth, the emperor, parents and teachers. Appropriate reverence was to be offered to teachers, whose intelligence and understanding was taken for granted and not doubted (Cortazzi & Jin, 1997). Wang & Mao (1996:48) announce that students were expected to “respect the teachers’ authority without precondition.” In addition to their broad wisdom and knowledge, teachers were, and are, considered by their pupils as their “parents”, people who will take care of them with consideration and love. Wan (2001) mentions that there is a Chinese saying about the relationship between students and teachers: “If someone taught you as a teacher for one day, you should respect him as your father for the rest of your life.” Sequentially, Guo (1996) stresses that pupils are expected to follow their teachers as they do their parents, and Chan (1999) asserts that Chinese learners have been raised to revere the intelligence, knowledge and proficiency of parents and teachers. They have been socialised to esteem those who offer knowledge and to preclude confronting those in authority. (Wang 2003)

In recent times, Kennedy (2002) indicated some “Confucian confusions”. Even though the “Confucian values” of socialism and orthodoxy are usually emphasised in research literature on “the Chinese learner”, it should be noted that, as discussed earlier, Confucius also stressed individuality in learning, “learning for the sake of the self”. Education is only consequential if it leads to the accomplishment of the self; “the purpose of learning is therefore to cultivate oneself as an intelligent, creative,

independent, autonomous, and authentic being”. Confucius also “promoted reflection and inquiry” in the learning process (see Lee, 1996, pp. 25-41), and Cheng (2000, p. 441) reveals that the Chinese term “knowledge” is made up of two characters: “one is ‘xue’ (to learn) and other is ‘wen’ (to ask). This means that the action of enquiring and questioning is central to the quest for knowledge.”

As to the impact of Confucianism on traditional Chinese society, Shen (2001) indicates two of the clearest features, the first of which is that many of the conventional values supported by Confucius, such as filial piety, esteem for the elderly, and moderation, still play a significant role in the lives of Chinese people. Secondly, Confucius and his disciples stressed education and learning, a tradition which still exists in Taiwan and many other Asian countries. On the one hand, Smith (1991) states that the legacy of Confucius continues to guide the people of Taiwan today. Their educational organisations, although not emphasising Confucianism as a major part of the curriculum, are actually components of a society which is shaped and moderated by the sage’s ethical and moral instructions. Thus, needless to say, Confucian tradition has deeply and irrevocably influenced Taiwanese education. Although there is no official educational statement to distinguish Confucianism as being part of the compulsory curriculum in education, the legacy of Confucian educational principles is the foundation of teaching and learning in Taiwan.

### ***2.3.3 Educational impact of John Dewey’s thinking since the 20<sup>th</sup> century***

The Republic of China, which was ruled by Kuomintang (KMT), was established in mainland China in 1911, following the fall of the last imperial regime. Popkewitz (2005) describes how Japan and some European countries endeavoured to colonise China through military force during this period. An anti-Japanese and



anti-European-power movement developed and spread throughout the whole country. Since America had not been engaged militarily in China, and had instead developed a helpful relationship to assist its progress, some intellectuals therefore advocated the learning of American ideas and theories. Numerous American theories were translated into Chinese. Amongst these, John Dewey's thinking about social science and education were highly acknowledged by Chinese intellectuals.

Dewey claimed, "all education proceeds by the participation of the individual in the social consciousness of the race," and "the only true education comes through the stimulation of the child's powers by the demands of the social situations in which he finds himself." Experience, to Dewey, was an essential component in education. For the core of knowledge acquisition lay in the awareness of relations, which could only be likely through the individual's investigation into his or her own experience. Society also had an influence on learning in various ways, however: it offered the environment, the motivation, the substance, and the resources for education (Di, 1992).

Löfstedt (1980) claims that the new intellectuals thought the traditional Confucian culture should be replaced by selected Western civilisations, i.e. by a world view derived from significant interpretations of "science" and "democracy." For many the key means of bringing about this cultural change was education. Also, Smith (1991) declares that Dewey made a series of proclamations on the suitable attitude toward the raging conflict in China between the traditional cultural stakes and new ideas. He thought that schools could adopt four tenets that would bond the old and the new: (1) open-mindedness, (2) purposefulness, (3) social and personal responsibility, and (4) appreciativeness.

Whilst Dewey was one of the catalysts at the turning point of Chinese education, it was chiefly through the Chinese, especially Dewey's former students and other returned students, that his thought took root in Chinese soil. Di (1992) asserts the driving force behind the implementation of Dewey's ideas was primarily educational efforts by his former students. To name a few, Dewey's first Chinese follower, Hu Shi, was one of the leading notables in the New Cultural Movement and one of the contributors to the *New Youth*, the most admired liberal periodical in the nation for intellectuals and youth. Hu continued to be an important Chinese thinker and scholar through his life. Jian Meng-lin, who worked as the editor of *New Education* during Dewey's visit China in 1919, took the position of President of the National University of Zhejiang, and later was Minister of Education from 1929-30. Tao Xing-zhi, another prominent and dynamic former student of Dewey, led the Chinese National Association for the Advancement of Education, and dominant educational organisation in the country, with Cai Yuan-pei (not a student of Dewey), Chinese first Minister of Education. Others involved include Yan Yang-chu (James Ye), Chen He-quing, and P.W. Kuo.

It was primarily through the endeavours and practice of these individuals that Dewey's theory in fact got implemented throughout Chinese education, and from there spread into Taiwanese education. The public school system of Taiwan was made to follow the American model, for instance, with the 6-3-3 scheme adopted (6 years of primary school, 3 years of junior high school, and 3 years of high school). This structure is still applied in Taiwan today. The aims of the new schools were (1) to support democracy at all levels, (2) to assist developing the conception of social evolution, (3) to take the economic status of people into deliberation, (4) to advance

education as a period of preparation for life, (5) to permit the school a measure of autonomy and flexibility at the local level, and (6) to employ the school as a laboratory for life in society.

Dewey's theory played an understandable role in the reconsideration of national curriculum. Di (1992) confirms that child-centred education provided the guiding principle when the Federation of Education Association met to amend curricula in 1922, and again in 1929. As the new textbooks emerged, as Hu Shi viewed it, "the emphasis was placed on the idea that the child was the centre of the school. The influence of Dewey's philosophy is easily seen in these revisions." Popkewitz (2005) declares that the sequence of educational progress was designed to change the Confucian child to the Chinese form of the modern child: they are permitted to ask the questions of the teacher; they can write out their own topic selections; they have break time between lessons (there was no break time for students and teachers previously); they can read children's stories at school. The child can act like a child without restriction, not a "little-adult".

Also, Keenan (1977) notes the school system offered set courses on "ethical education" at the primary and secondary levels in China. Dewey's investigation of how best to modernise the "ethics" classes was linked straight to his discussion of the consequence of the development of modern science on man. This learning process had the potential result of connecting knowledge to morality rather than trying to instruct knowledge alone, though at this stage this was primarily a matter of principle — it remained to be widely implemented.

#### ***2.3.4 Dewey's thoughts affect Confucian philosophies in modern education***

68

females are a problem to raise, the learned doctor advocates equal rights for men and woman; Confucius said transmit not create, the learned doctor advocates creativity is progression.” He might have inserted the humanistic goals of both thinkers were set within very different statements and came from very different sources of belief. Confucius claimed that “a gentleman is not an implement.” Dewey’s contribution to the establishing of functionalist psychology expressed the highest abilities of human beings as primarily instruments for amending the behaviour of an organism to its surroundings.

When the Republic of China was established in 1911, searching for modern educational methods was important and it became an urgent aim. Chan (2006) mentions that Head of the Ministry of Education, Cai Yuan-Pei, held the first Conference on National Education under the Republic in Beijing in July 1912. The conference aimed to develop and reform education, which was the first step toward constructing a new citizenry. Generally, the new education included five fields: military training, practical skills, moral cultivation, aesthetic education, and world outlook. In April of 1928, he became the first president of Academia Sinica. On the basis of Dewey’s theory, Cai proposed “the equal importance of the five ways of education and life - i.e. moral, epistemic, physical, social, and aesthetic” (*de, chi, ti, qun, mei*) (Cited in Chan, 2006, p.8), and these are still the objectives of education in Taiwan today.

In summary, despite changes over time, the development of the history of Chinese education has significantly impacted on Taiwanese education. Firstly, Confucian values have been the crucial principles for teaching and learning since ancient Chinese society. Secondly, the traditional education system, the civil examinations,

was abolished in 1905, but this mode of examination is still the only way to promote students to higher education. Thirdly, John Dewey's educational theories were implemented in the new educational movement by his followers in the 1920s. His thoughts including pragmatism or experimentalism, democracy, and science were applied in the new educational reform. John Dewey's central conception, child-centred education, compelled Chinese educators to focus on the education of the child, rather than the needs of the social system. This was seen as the major tool to transform traditional Confucian society via modern western education after the Republic of China was established in 1911, and it has been the essential theory in Taiwanese child education. Confucius' ideas underlined learning with thinking, the family basis of morality, and respect for imperial society. In contrast, Dewey's philosophy emphasises learning knowledge via real experiences in school activities, the individual basis of morality, and addresses the needs of democratic and scientific society. Finally, the proposed objectives of Cai Yuan-Pie have been a fundamental goal in contemporary Taiwanese education.

#### **2.4 Important social evolutions which changed Taiwanese education**

Education in Taiwan has not only been influenced by internal and external imperialism and the principles of leaders, but also by social development. During the 20<sup>th</sup> centuries, some significant social changes altered education in Taiwan. The two major political parties in Taiwan have taken turns to shape Taiwanese education (Su, 2006). After 50 years of KMT government, Taiwan held its first ever presidential election, when the national leader was directly chosen by the people, in 2000. The DPP candidate, Che Shui-bian, won the presidential election, and the KMT's supremacy in the central government ended. In the re-election for the Legislative Yuan in 2001, the DPP took the place of the KMT to become the most powerful

political party in Taiwan. The following discussion demonstrates how national social evolution impacted on Taiwan's education system over this period. The Taiwanese people had achieved democracy, transforming the government from a one-party system to one in which free elections decided who ruled the nation, and the executive power was handed over peacefully by the KMT (1945-2000) to the DPP in May of 2000 for 8 years ruling. However, the transformation imposed by both parties severely affected Taiwanese education.

When the Republic of China was relocated to Taiwan by the KMT in 1949, the government began a programme of modernisation of the educational system left by the Japanese. The Government Information Office (1990) mentioned that Western style democracy required an educated public which recognised its rights and accountabilities, and that this would demand an overhaul of the complete educational system. Struggles were restarted to set up the educational system when the central government moved to Taiwan in 1949, and the administration embarked on work to modernise the entire system. A more robust economy, land reform, and urbanisation all contributed to raising the overall educational level, and educational progress in Taiwan was soon increasing the number of schools and raising the enrolment figures. The percentage of the population in elementary, secondary and higher education also gradually increased until almost 100 percent of all school-aged children entered into Nine-Year Basic Education (6 years primary school and 3 years junior high school).

The Nine-Year Basic Education Plan of 1968 was the Republic of China's most crucial building block in the field of education. Kennedy (1977) asserts that the government began the programme to facilitate the educational growth of the country, by extending free education to the three-year period of junior middle school education

(grades 7 to 9). The programme resulted in the development of numerous school districts, enlarged school construction, decreased tuition fees in public junior high schools, and a build up of the number of public schools in rural areas. Additionally, textbooks and the curricula of both the primary and junior middle schools were revised, with increased emphasis on ethics and civics, as well as on the sciences. Also, the Nine Year Plan removed the entrance examination for junior middle school and the resulting cram lessons that fifth and sixth grade pupils traditionally took to pass the greatly competitive entrance examination and carry on with their education.

In addition, the Ministry of Education (MOE) set up compulsory subjects. The Government Information Office (1990) mentioned that the subjects of primary schools should be Chinese language, science, mathematics, civics, art, music, and physical education. A further new curriculum was introduced to primary schools by the MOE in 1993, and this revision allowed primary school students to select subjects from among English, computer, abacus, calligraphy, and choral singing for their optional courses. Meanwhile, the MOE revised some subjects, and the Government Information Office of President Lee (1996) declared that the social science and history textbooks would be reworked by 1997. One important change was that there was less highlighting of Chinese history, with more awareness being paid to Taiwanese culture and history, together with world topics. Arguments abounded about the phasing out of the corresponding parts of the Joint University Entrance Examination (JUEE) system, organising it completely on the basis of the *Three Principles of the People* and the thoughts of Dr. Sun Yat-sen<sup>1</sup>. Whilst Dr. Sun remained a valued historical figure, it was thought that the time had passed for schools to uphold only a single political principle.

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<sup>1</sup>Dr. Sun Yat-sen is deified as the National Father of the Republic of China. Even though he had passed away, Sun's principles, *Three Principles of the People*, were still adhered to by the KMT in the Republic of China. (Gold, 1986)



In 2000, the year of the presidential election, the government transferred from the KMT to the DPP, and when President Chen of the DPP ruled Taiwan, the MOE retained the educational system, but changed the pedagogic objectives. Thomas and Lien (2005) say that Taiwan's KMT government had promoted a "Cultural Renaissance Movement" by revising textbooks to "preserve" Confucianism, but in 2001, with the change of government, Taiwan embarked on using the Preservation Perspective to promote the "Taiwanese language," "Hakka language," or other indigenous languages in schools, in order to maintain and bolster Taiwanese identity. The Commissioner of the Department of Education in Taipei City, Dr. Wu, stated that one target of Taipei's educational system was to be certain that children acquired an awareness of national identity. Therefore, schools became a significant place for students to learn this "sense of national identity" (Wu, 2004, cited in Thomas and Lien, 2005, p.182). In terms of foreign languages, the DPP government set up the Taiwanese (*Fukien*, one type of dialects in Taiwan) as one of used languages for primary school students. The Ministry of Education (2006) stated that English education should begin in the 5<sup>th</sup> grade.

In addition, in terms of the curriculum, the Ministry of Education (2006) stated that whilst traditionally the government determined everything, including the standard curriculum and the uniform, this process was no longer appropriate in a democratic and free society. Nowadays, the Taiwanese government empowers local governments, schools and teachers to design the curriculum and teaching material according to their individual needs and those of their students. Herein lies the most crucial aspect of the reform from Nine-Year Basic Education to the Nine-Year Integrated Curriculum with Multi-edition Teaching Materials.

In summary, after several social changes, Taiwanese education has been modernised. Two ruling parties transformed Taiwan, the first of which, the KMT (1945-2000), adopted Dr. Sun's *Three Principles of the People* and typical Confucianism in the curriculum. Then the DPP (2000-2008) shifted from an emphasis on Dr. Sun's principles and Confucian thoughts to a focus on Taiwanese National Identity.

### **2.5 Development of basic education and the introduction of dialogic teaching in modern Taiwan**

After the Republic of China moved to Taiwan in 1949, the government struggled to modernise the educational system. Smith (1991) says that efforts to modernise the field of early childhood and primary school education have been ongoing since that time. Education has had to address the problems of illiteracy, an increasing population, and the demands of industrialisation. Thus both qualitative and quantitative amendments have been promoted. In 1978, the sixth vice president of Republic China, Shieh Tung-Min, states that the purpose of the National Education Programme and the Nine Year Basic Education Programme was to continue the basic education which began with the National Elementary Programme, and so cultivate young people in both mind and body, by shaping a sense of civic morality, extending the national culture, developing a scientific spirit, carrying out vocational training, and facilitating the growth of the basic skills needed for living in today's world. This would provide the basis for pupils to pursue further education or learn specific vocational skills, and would develop well-formed citizens who are patriotic, loyal and courageous. (Smith 1991)

Smith (1991) describes how the Compulsory Education Regulation first defined Taiwan's nine-year compulsory education in 1982, when primary schools were placed

under the jurisdiction of the country and city governments. Children of at least six years of age were to begin primary schooling without taking an entrance test, and after six years, pupils were expected to graduate with a primary school diploma and go into junior high school, again without tests. Junior high school also fell under the jurisdiction of country and city governments. After three years, it was presumed that students would receive a junior high school diploma. This is the essential structure of the present nine-year compulsory education system, which highly stresses mathematics, physics, chemistry and other sciences.

In terms of the curriculum, the MOE (2007) stated that the Nine-Year Integrated Curriculum was one of the most crucial educational reforms. Its eventual objective is to offer more variety in Taiwanese education. For example, it completely replaces the reliance of students on passing a national entrance examination to enter senior high schools. Junior high school pupils may now embark on what are called “multiple entrances schemes”, which is students could do well in their Joint Senior High School Entrance Exams simply by memorising the contents of the textbooks. Some students would even refuse material taught by teachers outside the bounds of these textbooks on the grounds that it would not appear in exams set by an examination committee. Also, the Integrated Curriculum emphasises the development of students’ creativity and thinking ability by advocating that they conduct their own research for assignments given in class, instead of relying on their textbooks. In this way, the curriculum is intended to develop versatile citizens, capable of reacting to the challenges posed by globalisation in the 21<sup>st</sup> century.

Mandarin Chinese is still the only official language in school education. Nevertheless, since Taiwanese society has become more liberal and open, other languages, such as

English, Taiwanese, Hakka, and indigenous languages are finding their way into the educational system. Since 2001, the MOE has required public primary and junior high schools to design language-based curricula derived from the mother tongues of their students. “Homeland Education” is another new subject which pupils in the third grade of primary school are required to take. Students are encouraged to cultivate an interest in the natural and humanistic concepts of their immediate environment, in natural resources, and in knowledge of Taiwan’s history.

With regard to textbooks, the MOE (2007) describes how, in the past, books for primary and secondary education were only published by the National Institute for Compilation and Translation (NICT). Then, in 1999, in order to address the target of diversified education, the core of its educational reform, the MOE implemented a One Standard, Multiple Textbooks policy. Multiple Textbooks means that textbooks are no longer monopolised by the NICT, and schools can organise a committee of teachers to decide the appropriate textbooks for their students from several publishers. One Standard means that the MOE permits pupils to take the basic competence test in terms of multiple entrances schemes which test their real academic ability by offering comprehensive questions based on MOE standards.

With regard to the use of dialogic teaching in contemporary basic education in Taiwan, the call for educational reform has been supported in order to meet social needs. Because of globalisation, Western educational pedagogy, including the use of dialogic teaching to develop children’s thinking, has impacted on Taiwan. In responding to the demand “to foster competition and ...cultivate pupils’ creativity and thinking ability” (MOE, 2000), Taiwan began curriculum reform with the Nine-Year Integrated Curriculum in 2001. This aimed to “help pupils explore their potential as

well as develop their capacity for adapting, thinking, and making necessary efforts to improve their living environment.” The curriculum would develop “capabilities which could be transferred” which would be promoted by dialogic teaching. As well as conventional knowledge, the main targets of the field of Science and Technology learning stressed the grasp of scientific techniques and the cultivation of “the capacity to apply information, and use such knowledge and skills in everyday life.” Moreover, the integration of materials across learning fields was strongly suggested to improve the effectiveness of both teaching and learning.

These reforms required significant changes in both curriculum content and pedagogy, and teachers were urged to apply dialogic teaching to enhance pupils’ thinking. However, most Taiwanese teachers are still constrained by the conventional cultural myths of the teacher-centred and examination-driven tradition (Yang, Huang, & Aldridge, 2002). In addition, primary teachers criticised the proposed curricular integration and the disorganisation of the textbooks, and the pressures of parental requirements seemed to overshadow the use of the new pedagogy (Yang, 2008). As a result, dialogic teaching has in fact rarely been applied thus far to develop pupils’ thinking in the Nine-Year Integrated Curriculum in modern Taiwan.

In summary, the modernisation of basic education has been the main target in Taiwan, Primary school education was already regulated within the Nine Year Compulsory National Education system, and traditional Confucian learning methods such as recitation have been abandoned - students no longer need to recite the contents of diverse subjects and take an entrance examination for the next level of schooling. Now Confucian theory has been replaced by the Nine-Year Integrated Curriculum, and the MOE has encouraged teachers to apply dialogic teaching to cultivate pupils’

thinking skills. However, dialogic teaching is seldom used by teachers because of traditional cultural myths, disorganised teaching materials, and the pressure of parental demands in modern Taiwan.

## 2.6 Conclusion

This chapter has talked about the development of Confucian and Taiwanese education, and can be summarised in four points. The first is that Confucianism has been a significant guide for teaching and learning since ancient Chinese society. This chapter has illustrated the concepts of Confucianism, including the intellectual education of Confucius, the moral instruction of Confucius, and Neo-Confucianism. Second, for this reason Confucianism is rooted in Taiwanese society, and the tenets of Confucianism has been the basis of Taiwanese education, with teachers, students, and political leaders following the principles to achieve harmony in society, even though Confucian principles as such are no longer included in the compulsory school curriculum. The *Analects*, the collection of Confucius's conversations and sayings throughout his lifetime which was compiled by his disciples after his death, illustrates many Confucian thoughts, including intellectual, educational and moral principles which still maintain influence in Taiwan. The situation of dialogic teaching in contemporary Taiwanese basic education illustrates the extent to which this is the case.

Third, within educational policy if not practice, Confucianism was superseded after the Republic of China was established by John Dewey's philosophy of child-centred education, which espouses learning knowledge via real experience in school courses, in the pursuit of democracy and the scientific society. These are crucial principles in modern Taiwanese education, but they stand in tension with Confucian traditions.

Fourth, the centre of Taiwanese education has moved in another respect too, from promoting traditional Confucian ideas to an emphasis on modern Taiwanese identity because of the change of ruling party from the KMT to the DPP. This shift is encapsulated within Nine-Year Integrated Curriculum, which urges teachers to apply dialogic teaching to cultivate children's thinking. The principles of dialogic teaching are more in keeping with Dewey's ideas about child-centred education, but, as noted, they have rarely been employed within Taiwan.

These then are the fault lines or points of tension within contemporary Taiwanese education. As a step towards considering how this tension might be reduced by striking a new balance between Confucianism and modern pedagogy, the following chapter will examine the characteristics of children's thinking in middle childhood, the approach of dialogic teaching to developing this, and how dialogic teaching might employ the Analects of Confucius to promote critical thinking about morality among Taiwanese children.

## **Chapter 3: The Development of Children's Critical Thinking in Middle Childhood**

### **3.1 Introduction**

This chapter considers the development of children's critical thinking. Thinking contains critical and creative features of the mind, both the application of reason and the generation of thoughts. Thinking is included in any mental activity, and facilitates the formulation or resolving of problems, making a decision or seeking understanding. It is through thinking that we make sense of our lives (Fisher, 2005), and this is one reason why it is so crucial to cultivate children's ability to think critically. The aim is to enable children to recognise what is occurring in their thinking when they arrive at knowledge by accurate reasoning, and what is taking place when they make errors in their thinking. Those aspects of logical reasoning which are applicable to daily thinking should be made clear to children, so that subsequently they can recognise logical argument and transmit it into the language of daily discussion, as well as using it to assist the growth of intelligence.

It is important to provoke critical thinking in middle childhood to support children in their transition between childhood and adulthood. Critical thinking is the ordered mental activity of assessing arguments or propositions and making judgments that may guide the development of beliefs and taking of action. Adolescents experience many changes in intellectual, emotional, social, and physical development. They start to frame their own thought processes and are at an ideal time to start enhancing their thinking, learning, and metacognitive strategies. Critical thinking, therefore, offers middle level pupils the foundational skills necessary to mentally process learning experiences, identify what has been learned, modify understanding according to new



information and experiences, and transfer learning to other matters (Huitt, 1998).

It is important to note that there are a number of distinct perspectives on the development of thinking. For Piaget (e.g., 1958), the key feature is the growth of mental structures over a period of time as a result of the inevitable cognitive reorganisation that follows on from the accumulation of experience. He states

“The concrete operational stage begins around six or seven years of age and lasts until eleven or twelve years. During the early part of this stage, the child begins to develop certain operational structures for conservation, spatial relationships and for classification and seriation (p.96).”

According to Piaget, it is evident that children between the ages of 6 and 12 are in middle childhood, which is the most fundamental period for this gradual development of thinking skills. Other authors see this process as something which is much less inevitable, and which has to be actively promoted. Kuhn and Dean (2005) claim that thinking skills are typically concerned with intellectual capabilities, which educators attempt to embed in pupils' minds so that these capabilities are available for use when required. Other perspectives (e.g. Resnick, Salmon, Zeitz, Wathen & Holochak, 1993) emphasise the social genesis of thinking, stressing that it is something people commonly do collaboratively, while they participate in the activities and meeting of objectives which fill their everyday lives. From this point of view, thinking is most frequently and crucially a social activity, embodied in the dialogue in which people participate in order to advance their personal and shared targets. One strand of work in this vein focuses on the growth of the specific thinking skills of inquiry and argument (e.g. Toulmin, 1958). The aims of these two skills are to identify questions, develop

descriptions, explanations, predictions, and models, applying evidence to think critically and to make linkages between evidence and explanations both individually and collectively.

Grayling (2008) makes an explicit connection between argument and the process of promoting thinking skills through education. He claims that philosophy should be a principal and constant element of the school curriculum from an early age in order to develop children's thinking skills, thereby significantly increasing the effectiveness of pupils' work in other subject fields. Underpinning his case is the idea that education ought to be as much, if not more, about training children in how to obtain and assess information as about instructing them in pre-digested information, especially after they have the literacy, numeracy and framework knowledge which provides the essential foundation on which teaching in research and thinking is based. Vygotsky (1978) and Dewey (1938) claim that one of the crucial functions of developing thinking is to make occasions for intentional dialogue. When pupils explore investigations, they produce ideas and obtain information they want to share and debate, and simultaneously, the problems they meet call for the collaborative consideration of different possible solutions (Wells and Ball, 2008).

Taking these different perspectives as a point of departure, this chapter explores the characteristics of the development of a child's thinking in middle childhood, the use of dialogic teaching to enhance a child's ability to think critically, the extension of this to moral reasoning, how to apply the philosophical perspective on the growth of a child's thinking, and how to employ the Analects of Confucius to assist in this.

### 3.2 Development of children's critical thinking in middle childhood

“The development of our minds is part of what it means to be educated, because it is part of what it means to be human. According to this view the key function of education is to teach children to think critically, creatively and effectively.” (Fisher 2008a, p.1)

Valett (1978) declares that any mental development which takes place between the ages of 5 and 12 is inevitably shaped by the nature of the child's primary school experience. Hence, children in middle childhood are at a crucial age for beginning the deliberate cultivation of critical thinking. The following section describes some of the key characteristics of children's thinking development in middle childhood.

#### ***3.2.1 Characteristics of children's thinking development in middle childhood***

Middle childhood, from the ages of 6 to 12, is an essential stage in growth, when children begin to have continual confrontations with different social situations outside their families, and start to steer their own way through communal activities. Coll and Szalacha (2004) claim that a child's academic self-perceptions in particular emerge and are established in middle childhood, providing the basis for academic achievement in middle school and beyond. Therefore, during middle childhood, the growth of a positive approach toward school, academic attainment, and ambitions for the future can have fundamental implications for children's success as adults. Also, Collins (1984) and Huston and Ripke (2006) assert that, in different cultures, the period between 5 and 7 years old is considered to be the beginning of the “age of reason” (see Rogoff *et al.*, 1975). Children are supposed to develop new abilities at this age, and are allocated roles and accountabilities in their families and societies.

Middle childhood has also been distinguished from adolescence cross-culturally, which is mostly marked by the beginning of puberty. Recent stress on the cognitive differences between children aged 10 to 12 and more mature adolescents have also provided accepted academic information about middle childhood and adolescence. Today, 6 to 12 year olds within the Taiwanese education system are consistently separated from older ages because this period involves the first 6 of 12 compulsory school years. The separation of children aged 6 to 12 in primary schools provides a distinguishing basis for the social definition of children, and the social construction which provides the pathway to development during this period.

Whereas nursery children are extremely tied to the concrete and most obvious immediate characteristics of tasks, the judgement of children aged 6 to 12 is more systematic and logical. Hence, Collins (1984) mentions that, in Piaget's view, the important psychological achievements of middle childhood are in the domain of intellectual capability. The aim of most of research deriving from Piaget's theory has been to recognise the logical mode of intellectual performance, and the gradual coordination of perceptions into coherent structures which underpins this. Certainly, the main contribution of Piagetian researchers has been to present a figure of the child at every stage of expansion as being an active, integrated human being in relationship to his or her surroundings.

In terms of cognitive development, Huston and Ripke (2006) declare that the celebrated theories of cognitive development have been replaced in recent years by theories which underline ongoing and nonlinear variations in memory, reasoning, and conceptual structures (e.g., DeLoache, Miller, & Pierroutaskos, 1998; Kuhn, 1998; Schneider & Bjorkland, 1998). However, these all still grant that children between the

ages of 6 and 12 build up new cognitive skills which permit them to think more flexibly and deliberately than preschool children. Examples include grasping of logical concepts, the capability to use numerous categories concurrently, metacognition (i.e. being able to analyse thinking and memory procedures and to plan them in advance), unambiguous, rather than implied, understanding, and self-reflection. Theories of cognitive development no longer talk of one-off maturational mechanisms within the child. Practically all recent research stresses procedures of change, including the continuous interaction of the child with the physical and social situation. For instance, Rogoff (1998) portrays learning as a collaborative process relating to the child's interaction with adults and peers, derived from a system of socio-cultural activities. The growing social abilities of children during this period are founded, in part, on their cognitive development, which allows more sophisticated moral reasoning, the capacity to reflect on oneself, and the capability to comprehend others' feelings and thoughts. For Rogoff, though, as a neo-Vygotskian, the impact of interaction is to do with the opportunity it presents for the learner to be inducted into an understanding already held by others (Shantz, 1983).

Within this period, children build up a new capability to simplify concrete instances and to control the complexities of some tasks which entail hypothetical reasoning. For instance, pre-adolescents begin to be aware that they can exploit universal definitions for operations and perceptions, such as an addition or a noun (Fischer *et al.*, 1983), and they can form all likely groupings of four types of coloured blocks (Martarano, 1977). Some theories regard this level as being the height of concrete operations, because it engages generalities about concrete events and objects (Biggs and Collis, 1982). Others determine it to be the beginning of something different, the capability to summarise hypothetical thinking (Case, 1980; Fischer, 1980; Gruber and Voneche,

1976; Halford and Wilson, 1980; Jacques *et al.*, 1978; Richards and Commons, 1983; Selman, 1980).

Children go through many changes during the periods of fast developmental growth known as middle childhood and adolescence, and Bowman and Ozreitch (2001) describe the characteristics of the typical child from middle childhood (aged 8-11) to early middle adolescence (aged 11-14). In general, in terms of the cognitive stage, children aged 8-11 have a reasonable level of thinking, with a limited capacity to extend thought to abstract conceptions. They turn from the imaginative and unsound thinking of early childhood, accumulate much general knowledge, apply learned concepts to new tasks with the gradual development of their capabilities, and are extremely interested in learning life skills from adults everywhere. There are individual differences between some children aged 11-14 who are still caught up with the concrete and the immediate, and others who are capable of merging coherent and abstract thinking. Some students are unable to think ahead to the consequences of their actions, and develop new thinking skills (such as abstractly thinking more about possibilities, the procedure of thinking itself, multiple aspects, and seeing things as being relative rather than complete).

Some information-processing approaches (e.g. Greeno, 1989; McGuinness & Nisbet, 1991; McGuinness, 1993) presume that the nature of intelligence is laid down early and that this produces outcomes via a continuous accumulation of many learning experiences: The child develops and changes a large number of cognitive “programs,” often called production systems (Klahr and Wallace, 1976; Gelman and Baillargeon, 1983; Collins, 1984). Key functions from an information-processing perspective are “memory” and “metacognition”, which show considerable development during

middle childhood. Metacognition is the intellectual process that permits the monitoring of one's own thinking, "thinking about thinking" (Berk, 2007, p. 327). Roderer & Roebbers (2010) claim that metacognitive monitoring and control processes have been shown to progress significantly during middle childhood, with the earlier development of monitoring leading to extended improvement in the relevant control processes (for a review see Schneider and Pressley, 1997). For example, around 6 to 8 years children become comparatively competent at assessing their learning progress (i.e., judgment-of-learning; Schneider, Visé, Lockl, and Nelson, 2000); they can differentiate in their confidence judgments between answers that turn out to be accurate versus inaccurate (Pressley, Levin, Ghatala, and Ahmad, 1987; Roebbers, 2002); and they make quite good predictions regarding which pieces of momentarily unavailable information they will later be able to retrieve (i.e., feeling-of-knowing judgments, Lockl and Schneider, 2002; Von der Linden and Roebbers, 2006). In spite of the early beginning of these monitoring skills, further improvements based on more correct confidence judgments and better differentiation are classically observed over later middle childhood (Roebbers and Howie, 2003; Roebbers, von der Linden, and Howie, 2007).

### *3.2.2 Thinking as developing critical thinking*

Critical thinking can be regarded as being as much an attitude of mind and a disposition to reply as it is an exploitation of successful information-processing approaches (McGuinness, 1993). Dispositions of this kind are categorised into three broad sorts by Ennis (1991): caring that confidence is not misplaced and that their judgments are justified; that one represents one's own and other people's standpoints openly and evidently; and that the viewpoints of every person should be acknowledged (see also Chandra, 2008). A developmental perspective on curriculum

materials can be framed which take these dispositions into account.

Critical thinking – including these dispositions – should be recognised as a spontaneous process in learning that begins in the early years when young children participate in inquiry as part of their exploring the environment and world around them. Young children can also make use of reflective thinking when they are questioned (Dewey, 1993). Considering critical thinking as a process rather than an outcome (Brookfield, 1987) helps us to become aware of its initial or growing forms so that we are capable of facilitating, encouraging, and promoting the development of these into more progressive, sophisticated forms. This is crucial as children's thinking is still undeveloped and immature (Meadows, 1993). Unless specific consideration is paid to fostering the development of children's inquiry, some parental child-rearing and school practices are more likely to squash the inquiring nature of children (Chandra, 2008).

Studies by Marksberry (1965), Lipman (1985, 1988), and Davis-Seaver (2000) show the need for the right atmosphere that enhances the growth of critical thinking from early on in life. One key instance of a well-built critical thinking course is Lipman's (Lipman *et al.*, 1980; Lipman, 1985) *Philosophy for Children* from the USA, which has had substantial impact both in continental Europe and in the UK (Fisher, 1990). Lipman (1991) provides a fundamental account of the potential influence of philosophy as a mould for reflective educational procedure. Of particular interest here is the fact that Lipman (1987) makes use of dialogue in two ways: employment of philosophical dialogue and debate in written works, and grounding classroom activity in approaches which uphold dialogue. His objective is not only to develop effective schemes for thinking, but also to create an educational environment where a critical



attitude and critical conversation are not merely accepted but actively sought (McGuinness, 1993).

Another study, reported by Davis-Seaver (2000), also provides an example of the need to offer children proper lessons in thinking. Davis-Seaver, who was a primary school teacher, argued “critical thinking is at the heart of the teaching and learning process” (p.6) as children learn in the course of solving cognitive conflicts, employing metacognition and reflection. From her own experiences of being a teacher, she argues that children spontaneously make use of critical thinking to solve problems and to discover creative ways of considering situations. The objective, therefore, to train pupils’ thinking is that critical thinking in children is able to be conceptualised as the ability of children to show an enthusiasm to enquire about things in their environment, to process knowledge they have constructed (Chandra, 2008).

Evidence that children are indeed able to participate in higher-order thinking has been provided by other researchers (Astington, 1993; Brown & DeLoache, 1983; Pramling, 1990; Donaldson *et al.*, 1983), who each study a specific variable such as focusing on cognitive development including its relationship with language, music, and play. Bringing them together is as making a mixture which shows the capability of children to participating in critical thinking. These studies are recognised as offering supports for the existence of this ability in children.

It can be concluded that during middle childhood (and more specifically between the crucial ages of 6 and 12 within the Taiwanese system) children begin to develop concrete cognitive ability. Children aged 6 to 10 develop reasonable thinking with limited knowledge, while 11 to 12-year-old children’s ability to think coherently

grows fast and produces new ideas with increased knowledge. Where it is encouraged, critical thinking is able to develop as a natural process within the primary school curriculum. Children can engage in higher-order thinking, especially where dialogue is used within classroom activity to nurture it.

### **3.3 Approaches to the development of children's moral reasoning.**

Definitions of moral reasoning rely profoundly on conceptions of moral rules and moral norms, so some initial consideration of these is necessary. A moral rule is often taken to be any rule concerned with human behaviour that is shaped in moral language or has a moral objective. These commonly take the form of widely acknowledged rules, such as, in many societies, "You should not lie, cheat, steal, or murder." These are identified as moral norms (Langford, 1995). Morality is an idiom which concerns a way of thinking about actions and characters based on whether they are good or bad, right or wrong, crucial and uncrucial. From this perspective, being morally conscious refers to the capability to decode things in moral idioms. The development of young people as moral thinkers entails them acquiring greater awareness of the moral features of their behaviour. Specifically, the aspects which are taken into account when making moral judgments transform as young people become more mature. The older and more mature we are, the broader is the extent of the aspects we can take into account in coming to moral judgments (Rowe and Dickson, 2006)

The notion of moral stages is derived from research going back to the 1930s, starting with the pioneering work of Piaget (Piaget, 1932). This study was broadened by Lawrence Kohlberg, working in the USA between the 1950s and the 1980s. Kohlberg's (1958) precise definition is that moral reasoning is concerned with the

reasons for upholding and questioning norms that are under test, since in specific circumstances they conflict with another norm. Piaget's (1932) definition is broader than that of Kohlberg and is that moral reasoning is concerned with why we respect usually admitted moral rules. This is broader than Kohlberg's definition in two ways. Firstly, it does not require that the norm has to be brought into question, since it encompasses reasoning about norms that are not in question. Secondly, Piaget clarifies the term "moral rule" to involve traditional rules that people think they are supposed to adhere to, like the rules of games, as well as moral rules in the more common sense, which is that such rules should contain moral language, or have a moral aim, and bear on human interest. However, Kohlberg in his later work tends to define moral reasoning as reasoning about the theory of justice (Kohlberg, 1971, 1981; Kohlberg, Levin, & Hower, 1983). In the first two of these sources, justice reasoning is thought of as usual ways of thinking that are able to be used to assess conflicting moral states. In the third (Kohlberg *et al.*, 1983, p. 91), he also claims that "Our starting assumptions led to the design of a research instrument measuring reasoning about dilemmas of conflicting rights or of the distributions of scarce resources; that is, justice concerns." (Langford, 1995)

The power of reasoning "appears not in infancy. It springs up, by insensible degrees, as we grow to maturity. But its strength and vigour depend... upon it being duly cultivated and exercised." This type of critical thinking is attuned to a concrete commitment to moral values that is able to be appreciated by people; it is also associated with children becoming able to sustain commitment to moral values even when these are not shared by other people. The point that allows us to look at how critical thinking and moral education can effectively be connected together is reasonableness. As Splitter and Sharp state:

Reasonableness is primarily a social disposition: the reasonable person respects others and is prepared to take into account their views and their feelings, to the extent of changing her own mind about issues of significance, and consciously allowing her own perspective to be changed by others. She is, in other words, willing to be reasoned with (Cited in Pritchard, 1996, p. 3).

Splitter and Sharp associate this idea of reasonableness with two other observations. First of all, reasonableness in the classroom is best advanced by supporting listening and dialogue, thus upholding a community of inquiry. Second, reasonableness goes some way toward linking the gap between thinking and action (Pritchard, 1996).

This is much in line with the views of Kohlberg (1970), whose difference between conventional and post-conventional moral thinking rests on corresponding differences between the intuitive and the critical (Baron 1988, Ch. 19). From this perspective, young children must learn intuitive rules without reason. Older children must be supported to build the justification of their intuitions by Socratic discussions or by means of engaging in moral philosophy (Lipman, 1988). The hypothesis that young children are not ready for critical thinking is unjustifiably pessimistic and negative, however. It is rooted mainly in the argument (e.g., Kohlberg, 1970) that cognitive development restricts moral understanding. Emler *et al.* (1983) directly oppose the hypothesis that moral stage scores stem from cognitive limitations. Turiel (1983) provides strong evidence to attack Kohlberg's statement that young children cannot understand the difference between morality and social convention. The fundamental root of critical thinking is being able to regard the 'feelings' of others, and by all reports (the articles in Kagan and Lamb, 1988, for example), this comes rather early.

Anderson (1980) states that he knows of no reason to think that children are unable to trade off one person's feelings against another's, and, indeed, there is substantial indication that children criticise merely quantitative tradeoffs in much the style that adults do.

### **3.4 Applying philosophy to cultivate a child's thinking**

The thought of applying philosophy to children has been claimed by various educators, and Fisher (2005) points that Vygotsky and others have illustrated that children can work at an intellectually higher standard when involved in supportive and shared environments. The major purpose of an agenda of philosophy for children is to help them to learn to think for themselves. The expansion of efficient methods to explore thinking is the main approach to how thinking is launched and built up in philosophy for children – never as an unproductive set of procedures, but constantly under the conditions of reflective thinking, especially as part of endeavours focused on thinking more precisely about thinking itself (Lipman, 1977). In what follows, we will explore the approaches of Western philosophy and of Confucianism to develop children's thinking.

#### ***3.4.1 Western philosophical approaches to developing a child's thinking and talking***

According to Fisher (2008b), the area of formal philosophy is conventionally split into four primary fields of study, namely 'epistemology, metaphysics, ethics and logic.' Thus, philosophy can be applied to cultivate the development of brains, such as 'Philosophical Intelligence (PI)', which is called into play when thinking goes further than simple information processing, ahead of the given norm. Philosophising is not derived from empirical observation, and has no necessity for devices or specific knowledge. It is enlightened by, but not compelled by, external authority. It concerns

an abstract understanding of how the world is perceived, and is given a definition in words. Philosophy, too, contains an attitudinal view, described by a probing, puzzled, speculative nature, and the aspiration to comprehend.

Moreover, Lipman (1977) affirms that education should start with pupils' experience, and since we possess little knowledge of the experiential endowment any individual child brings into the classroom, we can do no more than invent, or assist the child to invent, the experience which is to be the beginning of the learning procedure. The most effective method of doing this is to coordinate material in such a fashion that, as with a performance of art, it yields experience upon encountering it. Each such experience could contain the seeds of the subject-matter to be considered by children, but it could also endeavour to recruit their fund of experiences and thoughts. In this way, the children's educational offering is related to their past and their future at the same time.

Thus, philosophical knowledge is supposed to be implemented in curricula to develop children's thinking across the diversity of fields of learning. For reasons which go back to Plato, the discussion of philosophical questions has been withheld from young people. Indeed, Plato assumed that children ought to be protected from philosophy:

“You may have noticed how young men, after their first taste of argument, are always contradicting people just for the fun of it ... like puppies who love to pull and tear at anyone within reach ... so when they have proved a lot of people wrong, often themselves, they soon slip into the belief that nothing they believed before was true; with the result that they discredit themselves and the whole business of philosophy in the eyes of the world”  
(Cited in Fisher, 2005:130).

It is right about Plato to argue that, if any faith is as justifiable as any other or if argumentative triumph decides what is correct, then we have to want none of it. But it must be more likely to introduce philosophy to children in other means through collaborative discussions. Dialogue is not encounter between winners and losers but is an approach of question into what is correct, true and of value, in cooperation with others (Fisher, 2005)

Additionally, Fisher (2008b) says that Kant claimed, 'Philosophical knowledge is the knowledge gained by reason from concepts' (Kant, 1781). Philosophy involves enquiring and wondering (creative thinking), inventing and establishing thoughts, throwing up hypotheses, using imagination, making connections to new thoughts and echoing possibilities of substitutes ('possibility thinking'). It includes originating or creating relationships between ideas, analysing to test the authenticity of those ideas, and 'thinking-outside-the-box' about what could exist beyond the parameters of the given. A philosophical question ends in a thought, although a temporary one, which seeks to establish our knowledge of a specific conception or problem. Philosophy starts with wondering, in inquisitiveness and in puzzled thoughts about the world, but it also entails the implementation of accurate habits of intelligent behaviour in setting conceptions, and hunting for a justification of belief. Gardner says that 'students should probe with sufficient depth a manageable set of examples so that they come to see how one thinks and acts in the manner of a scientist, a geometer, an artist, and historian' (Gardner, 1999).

Philosophical conversation has flexible application in that it is able to be employed as abstract content in any subject field (Fisher, 2003a). For academics, this can denote

setting aside particular lessons for philosophical query, as supported by Lipman and his followers, or building space for philosophical queries within existing syllabus subjects (Fisher, 2003b). Philosophy is the effort for abstract knowledge, and is capable of being promoted by individual or communal concerns, by thoughts in fiction or poetry, song lyrics, paintings or films, or by problems confronted in social relationships and interests. The outcomes of a philosophical discussion expand across the syllabus, as the young become better at providing reasons, asking enquiring questions, shaping concepts, proposing, thinking, creating, resolving problems, and reaching decisions and views. Thinking jointly in critical, maintained and systematic methods assists young people to internalise the habits of intelligent actions, query and discussion (Fisher, 2005; Alexander, 2006). As 10-year-old Jemma says, 'Philosophy can help in all your lessons, no matter what you're learning'. When asked why this was so, she replied, 'Because it gets you questioning and wondering why' (Fisher 2008b, p. 103).

In order to apply philosophy efficiently within curricula to assist children's thinking, Fisher (2005) says that Lipman intends to pool children's social forces and to apply dialogue as a process to expand thinking. However, how is one to encourage children to become involved in a philosophical discussion? Lipman decided that the best approach to teach children to think was through stories, and therefore, he wrote a short children's novel called *Harry Stottlemeier's Discovery* to achieve this (see Fisher 2005: 129). What Lipman intentionally illustrates in the shape of the story is how children may behave in a real 'community of enquiry'. His features do not only talk about daily situations which the words denote and how to apply them, but also such philosophical themes as the essence of judgment and the way the mind works. The dialogue between the characters, and their findings, may be uncommon but it is not



exceptionally so. Thoughts involving the nature of ideas, intelligence, reality, and the exploitation of words have been the subject matter of philosophical disputes for centuries. However, the names of celebrated philosophers, and their efforts, are never mentioned in Lipman's books, nor do orthodox philosophical terms emerge. This is a purposeful strategy, conducted 'so that children can come to grips with ideas and not merely with labels'. Lipman desires children to consider the thoughts that underpin the covering of words, to discuss and share issues of mutual interest which occur. If we want children to become thoughtful adults, Lipman claims, we have to promote them to be thoughtful children. When children discuss questions, they begin to learn that merely having a view is not sufficient, but that they must have reasons to validate their judgments. Their words must obviously express denotation, and they must raise characteristics, with instances, to be set for counter-arguments, and expand ideas to their logical conclusion. This is supposed to be likely to bring children into contact with philosophy in another way by means of supportive dialogue.

Lipman has created a thorough set of materials, published by the Institute for the Advancement of Philosophy for Children (IAPC) at Montclair College, which it is proposed promote the expansion of philosophical discussion in the classroom. Each usage acquires the shape of a query into one or more issues which occur from reading a given text (Fisher, 2005). The reading may be of different types, and Lipman (1977, 1985) declares that philosophy in the literary instrument of a poem or a maxim began with the pre-Socratics. In fact, philosophy as an art of conversation could have started with Socrates himself. However, it could be said that philosophy as a subject for the young began as an instructional subject only when it built up a particular type of literature of its own: 'the philosophical children's novel.' The philosophical children's novel is an endeavour to substitute the conventional didactic text with a literary

content which may be essentially pleasant, significant and beneficial to the child. Pupils may go into a society of children discovering problems which are crucial to them and in a way which has significance to their own lives.

Additionally, Conroy (2008) claims that engaging with philosophical content can provide an inspirational construction to children's thinking, and that a correlative involvement with literature is able to develop their understanding of the connotations of philosophical generalities. Arnold Weinstein provides an expressive justification of literature as a logical, philosophical and sentimental resource, which we ought to clearly recognise because, as an appropriate philosophy, it forces its way through the surrounding space of individual constraint. 'The space of art', he proposes, 'yields a view of human reality as something networked, criss-crossed with ties and bonds, quite at odds with the individuated world we take to be real; our private body and mind as the fixed enclosure where we think we live as individual' (Weinstein, 2003). Instruction in the classroom can therefore be seen as requiring an awareness of both literary and philosophic elements as essential partners in the development of logic and wisdom.

#### ***3.4.2 The use of Confucianism to develop children's critical thinking***

For those who espouse this approach, the development of Philosophical Intelligence (PI) rests on showing pupils what it is to deliberate and act as a philosopher. Research suggests that a model pedagogy for promoting PI is a philosophical conversation commencing with 'communities of enquiry' (Fisher, 2003a,b; Lipman, 2003; Trickey and Topping, 2004). The method can be applied across the curriculum, but especially in social and moral education where the philosophical stress on questions and inquiring is crucial (McGuinness, 1999). It is in this context that Confucianism may

provide a method that can produce critical thinking, in a way comparable with PI.

Bailin and Siegel (2003) claim that, from a Western philosophical perspective, critical thinking is a 'normative umbrella' which relates to quality of thinking as applied to problem solving and decision making. These processes can be implemented in either critical or uncritical fashion, but they argue that critical thinking is a dominant ideal, and therefore an essential objective of education. In parallel manner, Kim (2003) considers critical thinking from the perspective of Confucian principles of learning, and portrays the procedure of turning knowledge into self-knowledge as the conversion of knowledge into wisdom. Based on Eastern philosophical concepts, she claims that Confucius' principle of learning is not passive, but contains a critical thinking element, in that Confucius supports reflection in learning. Learning is a process of dual reflection involving first the coordination of raw materials of knowledge into a comprehensible entirety, and then the incorporation of them into oneself as wisdom.

In the same way as PI, Confucianism can be integrated with conversation to develop children's critical thinking. Berling (2008) argues that proper use of the conversational component of learning requires some important pedagogical constraints. In particular, if it is natural (see earlier points on this) that pupils propose questions – even negative or critical questions – of Confucian stances based on their own views, it is crucial that Confucian voices talk back, responding to these critiques and producing their own diverse viewpoints. This kind of engagement can be implemented by means of close written readings, pedagogically designed so that pupils go into a continued conversation with the texts, perhaps in small group applying well-designed questions concerned with the meaning of text. The critical

purpose is to design the assignment so that the texts can “speak back” and withstand initial interpretation, guiding the pupil to in-depth understanding of Confucian perspectives, where the plenary comes in, with the teacher providing the Confucian voice after children have had the opportunity to develop their own ideas. Such conversation can happen in a plenary group (if the class is not too big), with the teacher supporting pupils to move toward the Confucian meanings. The key point is that the Confucian approach of learning texts, if managed correctly, has the potential to engage pupils deeply in an intellectual, experiential and reflective encounter with the text and tradition behind it. This learning can also develop the pupils’ awareness of how to learn, practice and critically reappropriate their own cultural traditions within a more deliberate and thoughtful approach.

The effective approach to developing children’s thinking, therefore, is to cultivate their reasoning, as is established in PI. Teachers should introduce philosophical knowledge to children within curricula, since appropriate literature can be an efficient instrument to teach philosophy in class. The correct literary texts may encourage children to produce philosophical questions, which may build up a ‘community of enquiry’ in the classroom. Children’s thinking is able to be stimulated by means of constant dialogue in the community, and as a result, the capacity of a child’s thinking may be continuously developed and improved. This approach can be integrated with Confucianism to develop children’s critical thinking, provided the task is structured so that the texts can reflect and resist initial interpretations, leading children to a deeper awareness of Confucian views. This conversation can take place within a community of enquiry involving both small groups and the whole class, with the teacher encouraging pupils to move further into the Confucian meanings. This method provides a way of applying PI approaches which is integrated with Confucianism.

### **3.5 Using dialogue to develop a child's critical thinking**

Fundamental to the preceding argument is the notion that critical thinking is an inherent personal quality which is essential to education in a free society. It involves the expansion of 'emancipatory reason' which is central to the free, rational and autonomous mind. The critical thinker has to know how to analyse arguments, make out assumptions, judge reliability, notice errors in inference and so on. Critical thinking is as much a stance of mind and a disposition to react as it is an exploitation of profitable 'information-processing' strategies (McGuinness, 1993). This also entails that children learn to become sustained by engaging with the thinking of others. They can be criticised for closed mindedness, or they can be supported to assess the power of their own reasoning abilities, to think it natural that people may change their beliefs and viewpoints, to prompt their own reasoning and the reasoning of others.

If children are to become open-minded and critical, their thinking ought not to be left to chance. They require to be shown how to think critically (Fisher, 2005). Paul (1993) identifies critical thinking with 'fair-mindedness', and this involves not only thinking well, but thinking fairly. He distinguishes critical thinkers from two other kinds of thinker, namely 'uncritical thinkers', who have few logical skills and are easily controlled and manipulated by others, and what he terms 'weak sense' or 'selfish critical thinkers', who seek to satisfy only narrow and self-centred concerns. He intends to develop critical thinking in a 'strong sense' by means of strategies which support children to be reasonable, fair-minded and skilled. Children are able to be helped to examine any idea, aim, action by a procedure of open-ended questioning, but one which involves engaging with others on an equal footing presumably, if fair-mindedness is to be promoted. Only by processing critical judgment will they

learn to become critical and fair-minded thinkers.

Promoting high quality thinking of this kind rests essentially on the design of learning tasks which are not rote or mechanical but have a level of open-endedness and ambiguity that sanctions learners to impose meaning, produce judgements or make multiple resolutions (McGuinness, 1999). According to Bloom (1956) 'evaluation' is the highest of the critical thinking techniques, which contains 'knowledge, comprehension, application, analysis and synthesis.' Bloom's classification can be employed in planning teaching activities. A critical thinker tends to be reasonable and fair-minded, and a technique for critical thinking can be built up by practicing questioning, offering reasons and the modelling of experience (sequencing, etc.) From a very young age, children are expected to question, provide reasons, predict and theorise, if only in the context of everyday activity. However, to be 'open-minded' and attain a balanced point of view also needs knowledge of the self and an understanding of others (Fisher, 2005), and this is necessarily a later addition. In terms of Bloom's evaluation too, to develop critical thinking skills is to obtain knowledge and understand others.

Similarly, Mercer (1995) claims that an alternative approach to the study of the development of knowledge and understanding is one which offers a more unequivocal identification of the role of language as a method for building up knowledge and understanding. Language is a crucial means by which we signify our own thinking to ourselves. Vygotsky (1962) portrays language as a psychological tool, something each of us employs to make sense of experience. It is primarily through the method of spoken and written language that future generations of society benefit from the experience of their for bears. It is also language which each new production employs

to share, debate and describe its own experience. Thus, language is not just a method by which individuals can originate ideas and communicate them, but it is also a method for humans to think and learn together. The cultural (communicating) and the psychological meanings (thinking) of language are not separate. At the simplest level, whenever you talk, you must think of what to say, and think about what you hear.

Thus, communication through language is a vital means to construct children's knowledge and understanding, and it is also essential for planning teaching activities to develop children's critical thinking. Dialogue is a communication structure compatible with the pluralistic standards of a democratic society, and has long been adopted by teachers concerned with helping their pupils to become independent thinkers and active citizens (Reznitskaya, *et al.*, 2009; Dewey, 1966; Freire, 1970; Kuhn, 1992). Dialogic methods in classroom teaching have been paid on the whole limited attention by researchers, but some, influenced mainly by socio-cultural learning theories, have recently begun to design and use analytical structures for investigating classroom conversation and its use of dialogics (Reznitskaya, *et al.*, 2009; Alexander, 2003; Mercer, Wegerif, & Dawes, 1999; Nystrand, Wu, Garmon, Zeiser, & Long, 2003). These studies offer significant information concerning teacher-student, student-teacher, and student-student interactions in the classroom (Reznitskaya, *et al.*, 2009). The value of social activity within education stems, at least relatively, from its dialogic organisation (Bakhtin, 1981; Mead, 1962; Vygotsky, 1981). When explaining the meaning of a 'genuine dialogue', Bakhtin differentiates it from 'monologism, which effects to have a ready-made truth. In monologic teaching, someone who knows and possesses the truth instructs someone who is ignorant of it and in error' (Bakhtin, 1984, p. 81). In dialogic teaching, in contrast, 'truth... is born between people who are collectively searching for truth, in the process of their

dialogic interaction' (Bakhtin, 1981, p. 110, cited in Reznitskaya, *et. al.*, 2009)

Most conversations in classrooms are asymmetrical, with the teacher in the more authoritative role. This is not really a bad thing, provided that role is understood correctly. However, if pupils are to make the best use of dialogue as an instrument for learning, they require some opportunities to use it among themselves, without a teacher. In the 1970s, researchers announced that conversations between teachers and the students in their class were most often systematised into a series of three-part exchanges (Sinclair and Coulthard, 1975; Mehan, 1979). 'First there was an Initiation by the teacher (I) – a question, for example – which stimulated a Response by a child (R) and then some Follow-up or Feedback comment from the teacher (F), which was usually evaluative' (p.57). The feedback usually initiated another cycle, and so the I-R-F form was replicated. This sort of exchange is still tremendously common today (Mercer and Dawes, 2008)

However, Barnes and Todd (1977) suggest how knowledge can be regarded by students as a negotiable product when they are enthusiastically involved in cooperative tasks. They propose that students are more likely to become involved in an open, extended conversation and debate when they are talking with peers outside the observable manipulation of their teacher, and that this type of talk allows them to take a more dynamic and independent 'ownership' of knowledge. Also, Barnes and Todd claim that the successful search for educational activities through group work requires pupils who (a) share the same thoughts about what relates to the discussion, and (b) possess a common conception of what it is trying to attain (Mercer 1995).

The significance of communication techniques as a requirement for effective group



work is shown by Mercer (1995, 1996), who differentiates three ways of talking and thinking which infuse peer activity in classrooms, namely 'disputational talk', 'cumulative talk', and 'exploratory talk'. The definitions of these three skills were described in Chapter 1. He (1996) claims that a clear framework of 'ground rules' depends on preparing children to participate in genuinely exploratory talk in classrooms, and that children should be encouraged to develop the skills essential for such collaboration so that consequential talk can, in his terms, be described as a 'social mode of thinking'. Various interventions have been designed to help teachers promote collaborative classroom tasks which foster exploratory talk of the kind identified (Mercer, 2000; Mercer & Hodgkinson, 2008; Christie *et. al.*, 2008).

Exploratory talk is vital for making meaning. As mentioned previously, some educators (Vygotsky 1978; Lipman 1977; Fisher 2005; 2008a) claim that children can work at a mentally higher level while involved in supportive and shared experiences framed by an agenda of helping them to learn how to think for themselves. The most efficient means to do this is by coordinating material in such a fashion that it produces influential experiences. Each such experience could contain the starting point of a theme to be launched with the children, but could also endeavour to recruit their prior experience and thoughts. Having pupils help construct one another's thoughts and generate meaning together is the core of critical talking. Barnes (1976) mentions that, in a true learning community established on the basis of exploratory talk, pupils will negotiate with, and dispute, another's ideas. Argument is an essential part of the learning procedure, and to participate in such difficult dialogue, learners must be sufficiently concerned with one another to desire to hear their ideas, and to desire to think through their own thoughts with the group. Trust is an important component in this collaborative learning community, specifically when pupils are confronting their

own and others' world-views, or thinking about new viewpoints (Pierce and Gilles, 2008).

The words employed to signify group work in both research and professional discussions vary noticeably. Collaboration and cooperation are frequently employed interchangeably, although endeavours have been made to distinguish these. For instance, Watkins, Carnell and Lodge (2006), resonating the difference extracted by Galton and Williamson (1992), portray cooperative learning as occurring when individual learners change their actions, share information and work together to attain their individual aims, while collaborative learning needs learners to change their actions and labour together in a joint task so as to attain a shared aim. If we consent to the idea that knowledge and meaning essentially intervene in the social processes of language as claimed by Mercer (1996), whether or not participation amongst peers is meaningful depends crucially on the quality of conversation which occurs during a collaborative or cooperative group work activity (Reznitskaya, *et. al.*, 2009). The best interaction in terms of learning outcome appears to involve pupils proposing ideas and explaining their reasoning to their peers, as happens after a disagreement. This is greatly compatible with the Piagetian emphasis upon the cognitive conflict occasioned by the exchange of thoughts. It also appears to be helpful, but not necessary, for students to refer back to earlier task material, or when the task is disputed, to attain group consensus over important meanings, both helping promote not just reasoning, but coordinated reasoning (Howe *et al.*, 2007).

One extended piece of research on collaborative work in classrooms was a Scottish Extension Project of the UK Economic and Social Research Council's Teaching and Learning Research Programme (TLRP), connected to the larger TLRP project,

'Improving the effectiveness of pupil groups in classrooms', also known as Social Pedagogic Research into Group Work (SPRinG) (Blatchford *et al.*, 2006 in Reznitskaya, *et al.*, 2009, pp. 142-143). The rationale for extending the research to the Scottish context was based on both compatibility and distinctiveness. Though the SPRinG Key Stage 2 (KS2) science agendas used whole-class discourse and teacher demonstrations, they also succeeded in widespread use of group work. The group tasks primarily integrated aspects which had been revealed in earlier experimental research (Howe & Tolmie, 2003; Howe *et al.*, 1995, 2000; Tolmie, Howe, Mackenzie, & Greer, 1993) to expand the opportunities of students proposing ideas, disagreeing, explaining reasoning, referring back and achieving consensus. Thus, the tasks were aimed to encourage the forms of student interaction which research had discovered to be beneficial (Howe *et al.*, 2007).

The properties of collaborative work and the extended benefits for argumentation skills promoted by pupils' discussion in group tasks have also been examined in detail by Reznitskaya and Anderson (2002). They argue that effective dialogical discourses offer an external field where every participant can observe and engage with a diversity of argumentation shifts, involving taking points on an issue, supporting it with reasons, confronting the perspectives of others, and replying to opposing viewpoints. As multiple experiences with argumentation become internalised, the individual obtains a conceptual knowledge system, encapsulated within 'argument schema theory' (AST). Collaborative reasoning (CR) (Reznitskaya, *et al.*, 2009) has been examined in a number of empirical studies employing an educational environment designed by researchers from the Center for the Study of Reading at the University of Illinois at Urbana-Champaign (Anderson, Chinn, Waggoner, & Nguyen, 1998; Waggoner, Chinn, Yi & Anderson, 1995).

CR places dialogic enquiry at the centre of its pedagogy. In CR, pupils in the 4<sup>th</sup> and 5<sup>th</sup> grades (aged 10-11) engage in small group discussions of controversial matters from their readings. The contents are selected to exemplify theses about experiences in which young pupils are participating, and which can motivate thoughtful and dynamic dialogue. In a typical CR discussion, pupils begin by taking preliminary positions on a 'big question'. Big questions tackle moral or societal dilemmas which are both composite and essential to human experience, such as friendships, truthfulness, disloyalty, isolation, animal rights, and professional responsibilities. During the group discussion, pupils are expected to offer evidence and reasons for their ideas, listen to and assess one another's reasoning, and address the issues from different perspectives. As before, the essential means to develop children's critical thinking is seen as being to foster their fair-mindedness and skills of evaluation and argumentation through language by means of an exploratory talk among peers and teachers. CR pedagogy enables the teacher to employ dialogic interaction for fostering children's talking and thinking, moving toward critical thinking in the primary school classroom.

### **3.6 Using dialogic approaches employing the *Analects of Confucius* and Western philosophical moral dilemma stories to develop children's moral reasoning and critical thinking**

As noted above, the philosophy for children movement (Lipman, 1977, 1985; Lipman *et al.*, 1980; Fisher, 1990, 2005, 2008b), claims that teachers can utilise philosophical literature to cultivate children's critical and creative thinking through group discussion in primary school classrooms. The *Analects of Confucius* is a cornerstone of philosophical understanding in Asian societies, whilst in Western research,

specifically designed philosophical moral dilemma stories have been applied to develop children's thinking (Lipman, 1977; Murriss, 1992; Cam, 1993; Fisher, 1990, 1998; Sutcliffe, 1993; Reznitskaya *et. al.*, 2009). The present thesis concerns how to apply dialogic teaching using the *Analects* and philosophical children's stories to cultivate children's moral reasoning and critical thinking. The *Analects of Confucius* were introduced in 2.2.3, and it has already been described how philosophy can enhance children's thinking. This section directly considers the approach to be used with the *Analects* and the moral dilemma stories.

As already mentioned, philosophy can be employed to enhance the development of PI. Philosophical literature can be effective material for forming a community of enquiry for children to talk and think critically and collaboratively in the classroom. Fisher (2008a) claims that as national and international issues become gradually more complex, and as the influence of these on our thoughts becomes greater, we need the ability of critical thinking to help us to make intelligent moral judgments on public issues, and so contribute democratically to the moral principles and values of society. This needs to begin by enhancing the critical awareness of children and their intervention as thinkers in the world, as its future transformers. The texts of the *Analects of Confucius* are concerned with morality, and present positive philosophical knowledge to develop moral reasoning and children's thinking.

With regard to the approach of asking moral philosophical questions in class, Jones (2000) declares that the philosophy of Confucius is essential to the programme of learning Chinese ideas and philosophy, and provides distinctive methods, which are frequently new to pupils, to deliberate on their personal lives and their relationship with the societies in which they participate. When we initially consider the *Analects of*

*Confucius* we are met with what appears to be a collection of Confucius's sayings, and guiding pupils through the *Analects* can seem to be an intimidating task. However, there are approaches by which we are able to help pupils who are just beginning to grasp the content. One of the easiest methods to arrange the content topically around major terms, since such a method will expose the abstract structure and harmony of Confucius' ideas. What is advocated is an analysis of some important expressions and their related parts, specially *li* • • (the proprieties or watching ritual rites), *ren* • • (human-benevolence or respected conduct), *junzi* • • • (gentleman), and *yi* • • (Justice, appropriateness, or morality). Approached in this way, the *Analects* assist a better comprehension of Confucius' thoughts and can help sustain pupils' interest in discussing moral values critically and collaboratively in the classroom.

Also, Jones (2000) notes that there are other approaches to guide children through the *Analects*. As Derrida states "a text is not a text unless it hides itself from the first comer" and the *Analects* is certainly a text which is able to be revisited again and again in many diverse ways. The reading of the content in the form of discussion outlined above is aimed to be an *entrée*, an entrance into it for the teacher and pupils who are coming to Confucius for an early or initial visit. Although *li* • • ; *ren* • • ; *xiao* • • ; *junzi* • • • and *yi* • • are at the heart of Confucius' philosophy, there are other essential concepts such as *Zhi* • • and *Xue* • • ; which ought to be included in the navigation of the text. These will enable teachers to guide children to think, discuss and discover the meaning behind the brief sentences of the *Analects* in terms of the different moral roots on which they are based.

The present researcher's teaching experience suggests the contents of the *Analects* should be regarded as big questions to encourage pupils to discuss the proper

explanation of each brief classic sentence in terms of different moral values. During group discussion, pupils can argue with one another's ideas to reach a consensus on the appropriate explanation of each sentence at the end of the discourse. Over time, this can develop children's argumentative skills and exploratory talk, whilst cultivating their moral reasoning and critical thinking in similar ways to CR. This is a different teaching approach to instruction in the *Analects* than the traditional methods such as memorisation, recitation, and thinking individually without an appropriate supportive explanation. As mentioned in the previous chapter, the *Analects of Confucius* has been abolished in the national curriculum in primary schools because of the incomprehensible nature of its contents. However, applying dialogic teaching to the *Analects* to develop exploratory talk and collaborative reasoning with children in small groups can cultivate children's ability to think critically, whilst also providing a window onto a crucial foundation of Taiwanese and Chinese culture. Therefore, the *Analects* have a specific potential value within contemporary Taiwanese education, contrary to the general exclusion of Confucius, but only when taught in a different way from the traditional approaches.

In contrast, in the moral dilemma stories employed in Western programmes, Lipman (1977) purposely used a narrative format to guide children as to how to behave in a real 'community of enquiry'. He led children not only to talk about daily questions, but also used philosophical themes as the core means of approaching work on thinking. Fisher (1996) states that every narrative involves the essential grammar of ideas and communication. We find out what occurred to whom and why by means of telling stories. Through stories, whether personal storylines, or the telling of conventional or contemporary stories, we can enlarge our thinking and learn about the framework, function, and aims of language. Stories can empower children to

internalise the features of narrative, and invite them to respond to powerful ideas and emotions to enhance their thinking and talking to form a community of philosophical enquiry, which involves them in a public discussion about meanings and values. It also motivates children to think what it means to be reasonable and to make moral judgments. This is not just a 'talking shop', but facilitates the generation of a moral culture, a means of thinking and acting together which develops virtues of conduct, such as respect for others, honesty and open-mindedness. This is a path to encourage children to think and talk aloud interactively in groups to foster their moral reasoning and critical thinking.

Using stories is an effective approach to develop children's talking and thinking. For example, a teacher was reading *Winnie the Pooh* to her class and made the issue the point where Piglet's grandfather is said to have two names 'in case he lost one'. The teacher stopped and prompted, 'Can you lose a name?' There was a pause for thinking and an exercising of brains. Rapidly a hand rose. 'You could if you forgot it!' One of the main advantages of applying stories as a motivation for thinking in the classroom is that a good story provokes the interest and participation of the children (Fisher, 1996). The imagination element of stories offers children the opportunity to reflect more precisely on real experiences by means of influential imaginary ones. Donaldson (1978) remarks on the existence of 'a fundamental human urge to make sense of the world and bring it under deliberate control'. She claims that this advocacy for children to produce meaning is best served in texts not totally 'disembedded' from their world of experience. Understandable stories provide the benefit of being embedded in human interest, such as characters, events and experiences, and provide children with the opportunity to 'decentre' from the immediacy of their own personal lives. They become capable of examining themselves by means of looking at, and thinking about,



others.

However, utilising such stories with Taiwanese children to develop their thinking has some problems. The first of these is language, since the original moral dilemma stories are written in English, and the researcher has yet to find a Chinese version in Taiwan. Translating them into Chinese may somehow lose some of the real expression and meaning of the original authors. Secondly, in comparison with the *Analects*, although these philosophical stories also interpret human morality, they talk directly about a variety of other concepts, such as anger, fairness, friendship, ghosts, wants and needs, and so on. Also, some stories describe the content fairly dramatically and brutally, such as 'The Story of Gelert' and 'The Hunting Story of Catherine Howard' (see Fisher, 'Stories for thinking', 1995: 21, 53). These may not be appropriate for Taiwanese children because the national regulation in Taiwanese primary schools does not allow teachers to use fearful, realistic, and brutal teaching materials, and there may indeed be ethical concerns with doing so. Thirdly, the Western stories are based on a different culture from the Taiwanese one, which may result in causing confusion in young children, and this may impede development of their thinking. Thus, even though Western philosophical moral dilemma stories may help to develop children's thinking in their home context, some points would be difficult to apply to cultivate the thinking of Taiwanese children in primary school classrooms.

In summary, the *Analects of Confucius* is the most essential work in Chinese moral philosophy, whilst Western philosophical moral dilemma stories have been the fundamental tool used to cultivate children's moral reasoning and critical thinking in the curriculum. In terms of CR using moral texts, the teacher can guide students to think about big questions and bring them into the class discussion using either of

these, not only educating children in terms of moral knowledge, but also extending the variety and imaginative logical thinking of these young people. This method may practically and effectively assist children's approach to moral reasoning and critical thinking. The key question remains, however: which type of material might best be suited to the Taiwanese context?

### 3.7 Conclusion

The aim of this chapter has been to illustrate an effective approach to developing children's moral reasoning and critical thinking in middle childhood, from 6 to 12 years of age. After the age of 6, children have a more concrete logical thought process, but their ability is restricted. However, from the age of 11 to 12, children's reasoning develops quickly, and they can formulate new thinking from what they learn. During this period, the development of moral reasoning provides an essential means of enhancing children's thinking with regard to what we should do in terms of moral rules and moral norms. Critical thinking is the way to develop children's ability to consider one person's feelings against another's and make suitable adjudications. The application of philosophy provides one method of developing the capability of a child's thinking, and build up their PI. Teachers may use philosophical literature to shape children's philosophical knowledge, encourage young people to ask philosophical questions, and then establish a 'community of enquiry' in the classroom so that the students' thinking can be encouraged and expanded by continuous conversation in the community. Dialogic teaching, exploratory talk, and the building up of argument schemas via collaborative reasoning present efficient and effective ways of developing children's critical thinking. The *Analects* and Western philosophical moral dilemma stories can both serve as materials for these approaches. Teachers may steer pupils to produce their different views by means of class

discussion, not simply by instructing children in moral understanding, but by expanding their diverse and creative thoughts. This approach may facilitate children's ability to think critically, but the question remains as to which type of resource might be best in a Taiwanese context. It is to empirical investigation of this question that we turn next.

## Chapter 4: Methodology

### 4.1 Introduction

The intention of this research was to examine the influence of dialogic teaching in Taiwanese primary school classrooms, using the *Analects of Confucius* or Western philosophical children's stories (Fisher, 1996, *Stories for Thinking*) to develop children's critical thinking and moral reasoning skills. A mixed methods approach was taken, to address the following specific research questions:

- 1) How effective is dialogic teaching in improving Taiwanese primary school children's critical thinking in the context of moral reasoning?
- 2) Do dialogic lessons using the *Analects* differ in their effectiveness from those employing 'moral dilemma' scenarios?
- 3) Do any effects relating to 1) and 2) vary according to age group?
- 4) Is there any evidence to support the argument that the *Analects* represent more culturally embedded materials for Taiwanese children?
- 5) What reasons do teachers offer for the poor take-up of dialogic teaching in Taiwanese schools?
- 6) Do teachers perceive the *Analects* as offering a potentially more useful resource for dialogic teaching?

The design and conduct of the exploratory talk approach to critical thinking and moral reasoning was piloted in a Taiwanese primary school, across three classes of different ages, who participated in dialogic teaching using texts from the *Analects of Confucius*. At this exploratory stage, interviews to establish current perspectives relating to dialogic teaching and children's development of critical thinking skills were held with

individual teaching staff in the same school. Subsequently, a primary school in a different province of Taiwan participated in the main study. The two schools were randomly selected. The researcher contacted the principals of these schools, one in Taoyuan and the other one in Tainan, during the early stage of the research to explain the aim of this study and ask for their permissions to implement the fieldwork in their schools. This initial contact took place via email. Both principals responded positively. The researcher then visited the schools and made a personal invitation to the two principals, presenting them with the informed consent shown in Appendix I to confirm their official authorisation. Both agreed that the experiment could be conducted in their schools.

The main intervention study was conducted within each of three year-classes, (7-8, 9-10, 11-12) using dialogic teaching under two intervention-group conditions: *Confucian-based*, using the Analects, or *Western-based*, using moral dilemma stories. A third group in each class year served as controls, following the regular curriculum without the intervention of dialogic teaching. Tests of language ability were used to check parity in this respect across the three conditions, and a written essay task was employed to examine intervention outcomes. The researcher also engaged in structured interviews with school staff and conducted a survey of parents across the three year groups.

The following sections of this chapter treat the design, methodological approaches, procedure and data analysis strategy for each component of this research individually, as set out in Table 4.1 below, before considering general issues of Reliability and Validity, Researcher Position and Ethical Conduct.

**Table 4.1.** Summary of empirical study components comprising this research

Dialogic teaching intervention	Classroom administered, across three age groups.. 2 x intervention conditions: 'Analects' or 'Moral Dilemma' 1 control condition	Study stimuli presentation (short story v position statement) Audio record of teacher + pupil group discussion Post test essay task
Survey of parental practice at home	Paper questionnaire distributed to parents for individual completion at home and return.	Self report responses Mixture of open, multiple choice, rating responses
Interviews with teachers	Structured interview schedule circulated ahead of individual interview meetings in school.	Open verbal responses to structured questions. Audio recorded

#### 4.2 The dialogic teaching intervention

Dialogue is a type of communication which is compatible with the pluralistic ideas of a democratic society, and it has long been held by educators to give power to pupils to become independent thinkers and dynamic citizens (Dewey, 1966; Freire, 1970; Kuhn, 1992; Reznitskaya et al., 2009). However, dialogic methods in classroom teaching were accorded little interest by researchers until comparatively recently. Informed mainly by socio-cultural learning principles, numerous researchers over the past 20 years have attempted to design and use analytical structures to investigate classroom discussion and its dialogic assets (Reznitskaya et al., 2009; Alexander, 2003; Mercer, Wegerif, & Dawes, 1999; Nystrand, Wu, Garmon, Zeiser, & Long, 2003). However, the many assertions made about the pedagogic potential of engaging in dialogue have frequently not led to important changes in classroom practices, and much conversation in schools stays firmly teacher-fronted, monological and conventional (Reznitskaya et al., 2009; Alexander 2003; Cazden, 2001; Nystrand, 1997; Onosko, 1990).

This situation is prevalent in the classrooms of primary schools in Taiwan, where teachers seldom guide classroom discourse to empower students' thinking, since they are used to employing traditional methods, and feel the pressures of the curriculum schedule do not allow space to divert into dialogic exercises. Given the lack of previous research in Taiwan itself, a key first step in this context is to identify dialogic methods that are actually effective within this cultural context. This research therefore, designed dialogic teaching interventions to support group discussion in the classroom, drawing on appropriate traditional materials and based on theoretically supported pedagogical frameworks, as discussed in Chapters 2 and 3.

As a general framework, the research applied the 'exploratory talk' of Mercer (1995, 1996) and the 'argument schema' of Reznitskaya & Anderson (2002) to develop students' reasoning by means of collaborative group work. Mercer (1996) asserts that whether or not collaboration amongst peers is valuable, and enhances efficient learning, depends on the quality of the conversation which takes place during group work activity. Similarly, work by Wells (1999) on dialogic studies encourages teachers to build up small-group tasks which enable all group members to contribute to the evolving result of the activity, and to collaboratively achieve a consensus which pushes them to critically evaluate the answers they make to the questions which attract them – concurrently offering them an opportunity for apprenticeship in these "genres of power" (1999: 264). Taking these ideas as a point of departure, the first step was to apply exploratory talk and argument schema methods to the *Analects of Confucius* and Western moral dilemma children's stories, to develop exercises that would cultivate Taiwanese pupils' critical thinking and moral reasoning, using groups of 5 to 6 pupils.

A crucial further dimension to consider was that of the teacher's role in these activities. Hardman (2008) noted that studies in UK and African classrooms produced the similar finding that when dialogue occurred, teachers opened up classroom discussion by unequivocally urging pupils to review one another's contributions. However, some teachers also showed a more flexible approach to unexpected pupil responses by asking for explanations rather than class review. Such questions were legitimate in the sense that they were targeting something authentically unknown to the teacher, thus acknowledging the significance of the pupils' original responses, while also generating an opportunity for them to extend these. Webb (2009) states that teachers have a crucial role to play in cultivating beneficial group dialogues and preventing debilitating processes, by making use of this kind of modelling. She explores four aspects of the teacher's role: 'preparing pupils to collaborate', 'forming groups', 'structuring group work to guide or require pupils to engage in convinced processes, and 'engaging in assured type of discussion with groups and the class'. Within this framework, after initial small group discussion, the teacher leads pupils to present a consensus from their group, as part of which plenary discussion is used to encourage pupils to respond to feedback, and to elicit further clarification and expansion of their original contribution. This method was employed in conjunction with the principles of exploratory talk and argument schema to conduct dialogic teaching with the *Analects of Confucius* and moral dilemma children's stories.

#### **4.2.1 Study materials**

Two sources were drawn upon to generate the group work materials. As already noted, the *Analects of Confucius* is one of the classical selections from Confucianism, which employs philosophy to enlighten people's moral education. *Stories for Thinking* (Fisher, 1996) provides a corresponding set of material taken from Western



philosophical approaches to children's moral education. The same dialogic teaching approach was used for both intervention conditions. A brief introduction of the *Analects of Confucius* and *Stories for Thinking* is provided below, with an indication of the differences and similarities between these two books.

The central concept of the *Analects of Confucius* (• • • *Lun-yu*) emphasises "benevolence/humanity", and the content of this book is a record of the life and conversations of the remarkable Chinese educator, thinker, and philosopher, Confucius. The book consists of 20 chapters and 492 sections, and was compiled by Confucius's students after his death. The text in this book is made up of brief statements, the educational meaning of which needs to be deeply thought about. For example, 子曰：「性相近也，習相遠也。」 (*Zi yue: "Xing xian jin ye, xi xiang yuan ye."*) means Confucius said: "By nature, all men are alike. But the differences in their environment and practices make them turn out differently." (On Yang Huo 17.2)

*Stories for Thinking* (Fisher, 1996) contains 30 philosophical children's stories. This book is a resource intended to cultivate the thinking, learning, and language abilities of primary-aged children. It consists of a collection of philosophical stories for children aged 7 to 11 to read and think about. Target questions to motivate and expand children's thinking via reflection and discussion are provided, related to the theme of each story. These questions address issues such as the nature of honesty, reality, justice, and friendship.

The similarity of these two books is that they are both concerned with the rational morals of humanity, and thus can be used as helpful resources for teachers to develop

pupils' thinking across the primary curriculum at different age levels. Where the two books differ is in their contrasting usage of condensed epithets and extended narratives. When the *Analects* is used to guide the curriculum to develop children's thinking in primary school classrooms, teachers are likely to find it helpful to utilise additional photos and stories to draw out the meaning of the sentences. Also, teachers should select the more comprehensible sentences from the *Analects* for pupils of different ages. On the other hand, when *Stories for Thinking* is used, teachers can follow the clear systematic structure of this book to encourage the children to think in-depth. Again, however, teachers should choose appropriate stories for pupils based on different age levels. In order to minimise the differences between these two materials, the researcher embedded the *Analects* in stories as *Stories for Thinking*. Stories related to the *Analects* were selected from *the Analects Stories for Children* (• • • •), which is only printed in a Chinese version. The strategy of the teaching plan relating to use of these two types of material was also the same, and focused on reading a story and discussing selected sentences or questions in small groups (see an example of a lesson plan in Appendix IV).

When choosing materials from the *Analects*, since the youngest children had lower literacy levels, one brief and less complex target sentence, along with a relevant story, was selected for them in every lesson; for example, 子曰：「性相近也，習相遠也。」

」•Zi yue: “xing xiang jin ye, xi xiang yuan ye.”)<sup>1</sup>. The students read a story for 7 to 10 minutes at the beginning of the lesson, after which they discussed the meaning of the

<sup>1</sup> Confucius said: “By nature, all men are alike. But differences in environment and Practices make them turn out differently.”

target sentence with a small group of peers for 10 to 15 minutes. Finally, one representative publicly presented their content, and the teacher encouraged them to discuss more in a whole class discussion for 8 to 10 minutes. Finally, the teacher summarised the children's discussion and explained the established meaning of the sentence.

The strategy for the older children was similar, but two more complex target sentences were selected for each lesson, such as 子曰：「默而識之，學而不厭，誨人不倦，何有于我哉？」 (*Zi yue: "mo er zhi zhi, xue er bu yan, hui ren bu juan, he you yu wo zai."*), which means that Confucius said: "Remembering the knowledge I have learnt, not feeling tired of learning and not growing weary in teaching – I have achieved all that." The sentences and stories of the Analects selected for use during the 12 lessons of the main intervention are shown in Table 4.2.

In contrast to the Analects lessons, the same story was used for each age group in the Stories lessons, but the youngest children were only asked to discuss one question, whereas the older two age groups were asked to discuss three. Table 4.3 shows the topics of each lesson for the different age groups in the main study.

Table 4.2 Stories and target sentences for the Analects lessons in the main study.

Materials Lessons	<i>The Analects of Confucius</i>	
	Age 7 to 8	Age 9-10 & 11-12
1	1. 子曰：「性相近也，習相遠也。」 • <i>Zi yue: "xing xiang jin ye, xi xiang yuan</i>	1. 子曰：「性相近也，習相遠也。」 • <i>Zi yue: "xing xiang jin ye, xi xiang yuan ye."</i> )

	<p>ye.”)</p> <p><b>Story:</b> Uphold your innate nature; free yourself from hindrances (性習近，習相遠)</p>	<p><b>Story:</b> Uphold your innate nature; free yourself from hindrances (性習近，習相遠)</p> <p>2. 子曰：「默而識之，學而不厭，誨人不倦，何有于我哉？」”(Zi yue: “mo er zhi zhi, xue er bu yan, hui ren bu juan, he you yu wo zai.”).</p> <p><b>Story:</b> Mi Fu concentrates on practicing a right-falling stroke in Chinese characters (米芾專心練「捺」)</p>
2	<p>•... 子曰：「學而不思則罔，思而不學則殆。」(Zi yue: “xue er bu si ze wang, si er bu xue ze dai.”)</p> <p><b>Story:</b> Looking for a horse with the aid of a picture (按圖索驥)</p>	<p>•... 子曰：「學而不思則罔，思而不學則殆。」(Zi yue: “xue er bu si ze wang, si er bu xue ze dai.”)</p> <p><b>Story:</b> Looking for a horse with the aid of a picture (按圖索驥)</p> <p>•... 子曰：「由，誨女知之乎？知之為知之，不知為不知，是知也。」(Zi yue: “You, hui ru zhi zhi hu? Zhi zhi wei zhi zhi, bu zhi wei bu zhi, shi zhi ye.”)</p> <p><b>Story:</b> Be practical and realistic • 實事</p>

		求是• •
3	<p>1. 子曰：「德不孤，必有鄰。」 (Zi yue: "de bu gu, bi you lin.")</p> <p><b>Story:</b> Jiang Ziya is Fishing• 姜太公釣魚• •</p>	<p>•... 子曰：「學而不時習之，不亦悅乎？有朋自遠方來，不亦樂乎？人不知而不慍，不亦君子乎？」 (Zi yue: "Wue er shi xi zhi, bu yi yue hus? You peng zi yuan fang lai, bu yi le hu? Ren bu zhi er buyun, bu yi jun zi hu?")</p> <p><b>Story:</b> Dilligence redeems Stupidity (勤能補拙)</p> <p>•... 子曰：「三人行，必有我師焉。擇其善者而從之，其不善者而改之。」 ••Zi yue: "San ren xing, bi you wo shi yan. Ze qi shan zhe er cong zhi, qi bu shan zhe er gai zhi")</p> <p><b>Story:</b> Confucius Visits a Teacher (孔子拜師)</p>
4	<p>1. 子曰：「父母在，不遠游。游必有方。」 (Zi yue: "Fu mu zai, bu yuan you. You bi you fang.")</p> <p><b>Story:</b> Resigning from a position as government official and returning home• 辭官歸養• •</p>	<p>1. 子曰：「里仁為美。擇不處仁，焉得知？」 •Zi yue: "Li ren wei mei. Ze bu chu ren, yan de zhi.")</p> <p><b>Story:</b> Breaking off friendly relations with somebody• 割席分座• •</p> <p>2. 子曰：「德不孤，必有鄰。」 (Zi</p>

		yue: "de bu gu, bi you lin.")
5	<p>1. 子曰：「里仁為美。擇不處仁，焉得知？」•Zi yue: "Li ren wei mei. Ze bu chu ren, yan de zhi.")</p> <p><b>Story:</b> Breaking off friendly relations with somebody • 割席分座 • •</p>	<p>1. 子曰：「巧言令色，鮮矣仁？」(Zi yue: "Qiao yan ling se, xian yi ren.")</p> <p><b>Story:</b> Honey-Mouthed And Dagger-Hearted (口蜜腹劍)</p> <p>2. 子曰：「父母在，不遠游。游必有方。」(Zi yue: "Fu mu zai, bu yuan you. You bi you fang.")</p> <p><b>Story:</b> Resigning from a position as government official and returning home • 辭官歸養 • •</p>
6	<p>1. 子曰：「知者不惑，仁者不憂，勇者不懼。」•Zi yue: "Zhi zhe bu huo, ren zhe bu you, yong zhe bu ju.")</p> <p><b>Story:</b> Three happy things of Rong Qiqi (榮啟期三樂)</p>	<p>1. 子曰：「知者不惑，仁者不憂，勇者不懼。」•Zi yue: "Zhi zhe bu huo, ren zhe bu you, yong zhe bu ju.")</p> <p><b>Story:</b> Three happy things of Rong Qiqi (榮啟期三樂)</p> <p>2. 子曰：「君子喻于義，小人喻于利。」(Zi yue: "Jun zi yu yu yi, xiao ren yu yu li.")</p> <p><b>Story:</b> Being heavier than Mount Tai or lighter than a feather • 重於泰山，輕於鴻毛 • •</p>
7	<p>••• 子曰：「人而無信，不知其</p>	<p>1. 曾子曰：「吾日三省吾身：為人</p>

	<p>可也。」•Zi yue: “Ren er wu sin, bu zhi qi ke ye.”)</p> <p><b>Story:</b> Put the human fundamental</p> <p>• 為人之本 • •</p>	<p>謀而不忠乎？與朋友交而不信乎？傳而不習乎？」(Zeng Zi yue: “Wu ri san xing wu shen: weir en mou er bu zhong hu? Yu peng you jiao er bu xin hu? Chuan bu xi hu?”)</p> <p><b>Story:</b> Zeng Zi butchered a pig (曾子殺豬)</p> <p>2. 子貢曰：「貧而無諂，富而無驕，何如？」子曰：「可也；未若貧而樂道，富而好禮者也。」(Zi Gong yue: “Pin er wu chan, fu er wu jiao, he ru?” Zi yue: “Ke ye, wei ruo pin er le, fu er hao li zhe ye.”)</p> <p><b>Story:</b> Rich but not arrogant (富而無驕)</p>
8	<p>1. 子曰：「君子喻于義，小人喻于利。」(Zi yue: “Jun zi yu yu yi, xiao ren yu yu li.”)</p> <p><b>Story:</b> Being heavier than Mount Tai or lighter than a feather • 重於泰山，輕於鴻毛 • •</p>	<p>•... 子曰：「君子坦蕩蕩，小人長戚戚。」•Zi yue: “Jun zi tan dang dang, xiao ren chang qi qi”)</p> <p><b>Story:</b> A gentleman is open and poised (君子坦蕩)</p> <p>•... 子曰：「君子成人之美，不成人之惡。小人反是！」•Zi yue: “Jun</p>

		<p>zi cheng ren zhi mei, bu cheng ren zhi e. Xiao ren fan shi!")</p> <p><b>Story:</b> Help somebody to achieve success (成人之美)</p>
9	<p>•... 子曰：「過而不改，是謂過矣。」•<i>Zi yue: "guo er bu gai, shi wei guo yi."</i>)</p> <p><b>Story:</b> King Xiang of Chu refuses suggestions (襄王拒諫)</p>	<p>•... 子曰：「君子義以為質，禮以行之，孫以出之，信以成之。君子哉！」(Zi yue: "<i>Jun zi yi yi wei zhi, li yi xing zhi, xue yi chu zhi, xin yi cheng zhi. Jun zi zai</i>")</p> <p><b>Story:</b> A learned man never stops his pursuit of knowledge• 泰山不讓土壤•</p> <p>•... 子曰：「三軍可奪師也，匹夫不可奪志也。」(Zi yue: "<i>San jun ke duo shuai ye, pi fu bu ke duo zhi ye.</i>")</p> <p><b>Story:</b> Last poem of Lu You (陸游臨終留詩)</p>
10	<p>1. 子曰：「默而識之，學而不厭，誨人不倦，何有于我哉？」•(Zi yue: "<i>mo er zhi zhi, xue er bu yan, hui ren bu juan, he you yu wo zai.</i>").</p> <p><b>Story:</b> Mi Fu concentrates on practicing a right-falling stroke in Chinese characters (米芾專心練</p>	<p>1. 子曰：「歲寒，然後知松柏之後雕也。」(Zi yue: "<i>Sui han, ran hou zhi song bai zhi hou diao ye.</i>")</p> <p><b>Story:</b> To die for a just cause• 殺身成仁•</p> <p>2. 子夏為莒父宰，問政。子曰：</p>



	「捺」)	<p>「無欲速，無見小利。欲速則不達，見小利則大事不成。」•Zi</p> <p><i>Xia wei ju fu zai, wen zheng. Zi yue: "Wu yu su, wu jian xiao li. Yu su ze bu da, jian xiao li zed a shi bu cheng."</i></p> <p><b>Story:</b> Haste Makes Waste (揠苗助長)</p>
11	<p>1. 子曰：「由，誨女知之乎？知之為知之，不知為不知，是知也。」(Zi yue: "You, hui ru zhi zhi hu? Zhi zhi wei zhi zhi, bu zhi wei bu zhi, shi zhi ye.")</p> <p><b>Story:</b> Be practical and realistic 實事求是••</p>	<p>•... 子曰：「君子求諸己，小人求諸人。」•Zi yue: "Jun zi qiu zhu ji, xiao ren qiu zhu ren.")</p> <p><b>Story:</b> Sun Kang applies light snow (孫康映雪)</p> <p>•... 子曰：「君子不以言舉人，不以人廢言。」(Zi yue: "Jun zi bu yi yan ju ren, bu yi ren fei yan.")</p> <p><b>Story:</b> Do not reject an opinion because of the speaker (不以人廢言)</p>
12	<p>•... 子曰：「三人行，必有我師焉。擇其善者而從之，其不善者而改之。」•Zi yue: "San ren xing, bi you wo shi yan. Ze qi shan zhe er cong zhi, qi bu shan zhe er gai zhi")</p> <p><b>Story:</b> Confucius visits a teacher</p>	<p>1. 曾子曰：「君子以文會友，以友輔仁。」(Zeng Zi yue: "Jun zi yi wen hui you, yi you fu ren.")</p> <p><b>Story:</b> Friendship helps virtue (以友輔仁)</p> <p>2. 宰予晝寢。子曰：「朽木不可雕</p>

	(孔子拜師)	<p>也；糞土之牆，不可朽也。於<u>予</u>與何誅？」(Zai Yu zhou qin. Zi yue: "Xiu mu bu ke diao ye, fen tu zhi qiang bu ke wu ye. Yu yu yu he zhu?)</p> <p>Story: Confucius and Zai Yu (孔子和<u>予</u>)</p>
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Table 4.3 Stories and questions used in the Stories lessons in the main study

Lessons	Materials	Stories for Thinking	
	Story	Questions to Age 7 to 8	Questions to Age 9 to 10 & 11 to 12
1.	The story of Gelert	1. Does getting angry do any good?	1. Does getting angry do any good? 2. What do people look and feel like when they are in a rage? 3. What is the difference between being in a good temper and a bad temper?
2.	The Two Painters	1. What things in the world can be beautiful? Can you give examples?	1. What is the difference between an ordinary picture and a beautiful picture? 2. What things in the world can be beautiful? Can you give examples? 3. Can a person be beautiful?

			What makes a person beautiful?
3.	The Workers in the Vineyard	1. Some people think that everyone is equal and should get the same amount of money. Do you agree?	<p>1. Some people think that everyone is equal and should get the same amount of money. Do you agree?</p> <p>2. Should all children get the same amount of pocket money? How much should they get at your age? Why?</p> <p>3. Is life always fair? Can you give examples of unfairness in life?</p>
4.	The Bear that Spoke	1. Can people fight and still be friends?	<p>1. Can people fight and still be friends?</p> <p>2. Can someone have no friends? What would it be like to have no friends?</p> <p>3. What makes a friend a special person? Is it someone with whom you are always honest?</p>
5.	The Old Woman in the Vinegar Bottle	1. Do you think being happy is the most important thing in the world?	<p>1. Can you always tell if someone is happy or sad? How can you tell?</p> <p>2. Do you think being happy is the most important thing in the world?</p> <p>3. What do you need to be happy in life?</p>
6.	Pandora's Box	1. Do you think there is hope in every situation, or are some situations hopeless? Give examples?	<p>1. Do you think there is hope in every situation, or are some situations hopeless? Give examples.</p> <p>2. Do you think hoping is the same as wishing? Is it the same as wanting?</p> <p>3. Does hoping for things</p>

			help to make them happen?
7.	The Rocking Horse Winner	1. Are some people are lucky? Can you give examples?	1. Are some people lucky? Can you give examples? 2. Are some people unlucky? Give some examples of bad luck. 3. Can an unlucky person have good luck? Can you give an example?
8.	The Cat who Kept her Name	1. Why are boys' names different from girls' names?	1. Why are boys' names different from girls' names? 2. Could people re-name everything in the world if they wanted to? 3. Are some names better than others?
9.	The boy who always asked questions	1. How can asking a question help you? Give examples.	1. How can asking a question help you? Give examples. 2. What is the difference between a right and wrong answer? 3. Are there some things that no-one can tell you and only you can find the answer to?
10.	Nail Soup	1. What is real soup? What does real mean?	1. What is real soup? What does real mean? 2. To know if soup is real would you have to taste it? How would you test it to see if it was real? 3. Do people ever pretend things are real when they are not?

11.	Not true!	1. Should people be honest and tell the truth? Why?	1. Should people be honest and tell the truth? Why? 2. Is it possible to tell the truth all the time, and never tell lies? 3. Why do people tell lies? What are possible reasons for telling lies?
12.	How much land does a man need?	1. Is wanting something the same as needing it? Give examples.	1. Is wanting something the same as needing it? Give examples. 2. Are there people in the world who do not have the things they need? Who? What things? 3. Why do people have pets – to satisfy their needs or wants?

#### 4.2.2 Intervention design

The intervention was conducted by the teacher-researcher over a series of lessons, one lesson per week, with 40 minutes to a lesson. In the pilot study, three to five small discussion groups were set up in each of three classes of different ages, with the intervention running over four weeks. Pupils participated in group discussion exploring the meaning of Confucius' sayings from their set readings. They were asked to offer reasons and evidence for their positions, to listen to and evaluate one another's reasoning, and address the issues from these different viewpoints. They then had to reach consensus in writing. Recordings of selected groups' discussions were taken via MP4 in each of the lessons, to facilitate analysis of discussion content. Once the group discussion had been concluded, group members reported back to the rest of their class on their conclusions, which were used as the basis for whole class commentary and discussion. This too was recorded for later analysis.

The main intervention study employed a similar structure. Three to five small groups (4 to 6 children in a group) were set up in each of six experimental classes. Three classes, of different ages, were assigned to the intervention applying the *Analects*. The other three classes with corresponding age groups were allocated to the intervention employing *Stories for Thinking*. In all cases, the teacher-researcher conducted the interventions.

The intervention ran over 12 weeks, and each lesson of 40 minutes was distributed as follows: 10 minutes for pupils' individual reading, 20 minutes for small group discussion, and 10 minutes for conclusion. The teaching agenda in the two interventions was similar. The teacher gave out materials with different themes to pupils every lesson. Each small group had a worksheet with either one selected sentence from the *Analects* or a question related to a moral dilemma story. The small groups had to discuss the meaning of the selected sentence or respond to the question, keeping a record about their discussion on the worksheet. Each group had to conclude their discussion by arriving at a consensus to report back to the class. Recording of group and whole class discussion was as for the pilot.

#### **4.2.3 Intervention Post-test**

Dong *et al.* (2008), Kim (2001), Reznitskaya *et al.* (2001, 2007) conducted four studies on Collaborative Reasoning (CR) in primary school classrooms (Grades 4 and 5). In all four studies, after completing their respective interventions, pupils were given the same post-test, in which they were required to write a thoughtful essay in response to a three-page story, which was similar to those provided as the focus of the CR discourses about moral dilemmas. The essays were marked by raters, blind to

whether the essay was written by a pupil from a CR classroom or a control classroom. Raters applied an analytic scoring system which provided quantitative measurements of pupils' argumentative capabilities.

The main intervention study in this research employed a similar approach to assess the impact of the dialogic lessons. Two versions of the post-test essay task were used, one akin to the intervention exercises using the Analects, and the other to those based on the moral dilemma stories. Use of these two post-test tasks was counter-balanced (i.e., half the children in each intervention condition were assigned to the Analects exercise, and half the children to the other exercise), in order to ascertain how far any apparent benefits were task-specific, and how far they generalised. The length of the essays varied according to the age of the pupils, 7 to 8 year old children being asked to write 50 words, 9 to 10 year olds 100 to 150 words, and 11 to 12 year olds 200 to 250 words. Essays were written immediately after the final intervention lesson, and took approximately 40 minutes to complete. They were then scored by raters to measure evidence of individual pupils' critical thinking, as described later in this chapter.

#### ***4.2.4 Data management and analysis strategies***

The principal data from this aspect of the research consisted of interactive classroom conversations among pupils and the teacher-researcher, and the post-test essays. To analyse the former, transcripts of the audio record of classroom conversations were generated, and then analysed using content analysis based on dialogic coding. The post-test essays were analysed using dialogic coding with same categories as the classroom conversation. Further detail is provided in the following sections.

#### 4.2.4.1 Transcription of classroom talk

As Heritage and Atkinson write:

[. . .] transcripts result from and represent an attempt to get as much as possible of the actual sound and sequential positioning of talk onto the page, while at the same time making this material accessible to readers unfamiliar with systems further removed from standard orthography.

(1984, p. 12)

In other words, a transcript can be seen to be a *translation* of real speech, made for diverse practical reasons into a version of the language of the specific community, with some discriminating signs of the real speech production. Alessandro Duranti (1997, p. 142) emphasises ‘the fact that the process of transcribing implies a process of socialisation of our readers to particular transcribing needs and conventions.’ Probably the best approach is to combine the two procedures to make and to read the transcripts (Have, 2007).

The classroom talk in this research consisted of Chinese speech. In order to address both the reality of what was spoken and the standardised language of generalisation, the actual sound and sequential position of the Chinese conversation was transcribed, and the Chinese version was then systematically translated into English. This research applied Gail Jefferson’s transcriptional form (as shown below), developed in the 1960s, which used symbols on a standard typewriter keyboard to indicate prosodic features of conversation which are common in daily interactions.

#### Simplified Jeffersonian transcribing conventions

Symbol	Example	Explanation
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(0.6)	that (0.5) is odd?	Length of silence measured in tenths of a second.
(.)	right (.) okay	Micro-pause, less than two-tenths of a second.
...	I::: I don't know	Colons indicate sound-stretching of the immediately prior sound. The number of rows indicates the length of prolonged sound
	I <u>know</u> that	Underlining indicates speaker's emphasis or stress.
(	T: (Well at's	Left bracket indicate overlaps another's talk
=	R: (I mean really you know=I fine	Equals sign indicates there is no hearable gap between the words.
WORD	about a MILLION	Capitals, except at beginning, indicate a marked rise in volume compared to the surrounding talk.
· · ·	· Uh huh ·	Words in degree signs indicate quieter than the surrounding talk.
· · · · ·	· I don't know ·	Words in 'greater than' then 'less than' signs are delivered at a faster pace than the surrounding talk.
· · · · ·	· I don't think ·	Words in 'less than' then 'greater than' signs are delivered at a slower pace than surrounding talk.
?	Oh really?	Question mark indicates rising intonation
.	Yeah.	Full stop indicates falling intonation.
Hhh	I know how .hhh you	A row of h's prefixed by a dot indicates an inbreath, without dot, an outbreath. The number of h's indicates the length of the in- or outbreath.
( )	What a ( ) thing	Empty parentheses indicate inability to hear what was said.
(word)	What are you (doing)	Word in parentheses indicates the best possible hearing.
(( ))	I don't know ((coughs))	Word in double parentheses contain author's descriptions.

Adapted from Jefferson (2004), Cited in Flick (2007b, p. 59-60)

#### 4.2.4.2 Content analysis and dialogic coding of classroom conversation

“Content analysis is a research technique for making inferences by systematically and objectively identifying specified characteristics within a text” (Stone *et al.*, 1966, p. 5, cited in Krippendorff, 1980, p. 23)

Content analysis is a research process for producing valid inferences from data, and it entails the use of specific methods. As with all research methods, its intention is to offer knowledge, new insights, an account of the “facts”, and a sensible guide to action (Krippendorff, 1980). Content analysis is also a research method aimed at the impartial, systematic and quantitative depiction of the evident content of communication (Berelson, 1952; Krippendorff, 1980). Communication is a fundamental concept of social interaction, and the content-analytic process can be applied to straight text or to records of human communications. An essential idea in content analysis is that the numerous words of the text are sorted into much fewer content categories, each of which may be made of one, several, or many words. Words, phrases, or other units of context sorted into the same category are assumed to have similar connotations, depending on the objectives of the researcher. When making valid inferences from text, it is crucial that the categorisation process is reliable in the sense of being coherent: different people are supposed to code the same text in the same way (Weber, 1990). However, the best content-analytic research has been argued to apply both qualitative and quantitative approaches to the source material (Bryman, 2008). This was the approach adopted here because the data consisted of diverse classroom talk between pupils and the teacher-researcher, and children’s written essays, and it was considered that an authentic picture could not be

gained by using only one approach.

As far as dialogic coding was concerned, the categories employed were based on those identified by past research as constituting the predominant moves made in group work exchanges and in dialogue between teachers and children (Mercer, 1996; Howe, Tolmie, Duchak Tanner & Rattray, 2000). In adopting these, a crucial consideration was that these also provided a mapping of key aspects of critical thinking, as considered in Chapter 3: the proposition, elucidation, and relative evaluation of a set of ideas. The codings used are detailed below:

1. Proposition (pr): teacher or pupils provide an idea, action or make a relevant statement.
2. Disagreement (dg): teacher or pupils oppose a proposition or explanation offered by another child.
3. Agreement (ag): teacher or pupils agree with group peer's either proposition or explanation
4. Explanation (ex): teacher or pupils provide a rationale for a proposition.
5. Elaboration (el): teacher or pupils offer an interpretation at greater length or in great detail
6. Reference back (rb): teacher or pupils refer to a previous conversation in the dialogue.
7. Resolution (r): teacher or pupils regulate, or agree with, another's statement in such a way as to resolve a dispute or disagreement.
8. Question (q): teacher or pupils provide an open-ended question (or some kind of prompt) which guides the thoughts to something not yet considered.
9. Contact (c): teacher or pupils provide propositions that connect implicitly with other ideas or themes.

10. 'Uncodable': interaction is either inaudible, indecipherable or not covered by a code.

The coding categories were designed to provide a fine-grained breakdown of the more general categories employed by Mercer, so that these could be mapped onto individual dialogue turns. These codes were intended to explicitly correspond with Mercer's categories. As mentioned in Chapter 1, according to Mercer's theory of the three stages of exploratory talk, *disputational talk* is competitive rather than cooperative, emphasising disagreement, and therefore is identified with disagreements and agreements. *Cumulative talk* is largely conducted by means of repetition and expansion, but without critical engagement; since it is aimed at building 'common knowledge', it is defined by codes for propositions, elaborations and contact. *Exploratory talk* involves the exchange of ideas, justification, and where appropriate, criticism; since it leads to the joint construction of new knowledge, it is characterised by explanations, elaborations, reference back, resolutions, and questions. The codes were applied to analyse the classroom conversation between the teacher-researcher and the pupils in the intervention groups across the three year-classes in both the pilot study and the main intervention.

#### 4.2.4.3 Content analysis and coding of the post-test essays

The content of the post-test essays was evaluated using the same dialogic coding as the classroom conversation. As noted in the previous section, the 10 categories provide a mapping of the key features of critical thinking, and could therefore be used to assess the development of children's argumentative skills. The use of the same scheme also made it possible to link essay content to evidence of critical thinking in the intervention groups. The same coding scheme was employed for the essays as for the group dialogue in order to make it possible to see whether features of dialogue that

appeared to be promoted by the Analects and Stories material subsequently showed up in the post-test. The validity of the scheme for coding of written materials as opposed to speech might appear at first sight to be questionable, but the rhetorical style employed in Chinese writing (and thus the kind of model that children in the study would be becoming increasingly familiar with) is much closer to spoken language than is typically the case in English (You, 2005), and therefore the coding system in fact worked well for this purpose.

#### 4.3 Survey of parental practice at home

The rationale for comparing dialogic teaching interventions to promote critical thinking using the Analects and moral dilemma stories rests on the argument that the former material will be more effective because of its greater cultural resonance. The cultural resonance claim is difficult to assess empirically, however, despite the fact that the historical embeddedness of Confucian ideas in Taiwanese society is self-evidently greater. One method of attempting to assess the validity of the claim, at least partially, was to examine how far Confucian ideas and material actually have currency within the homes of Taiwanese school children, in terms of usage by parents to address issues of morality. This approach had the advantage of making it possible to assess usage of illustrative scenarios and narratives similar in form to those employed in *Stories for Thinking* at the same time, providing a measure of the relative currency – and in this sense, resonance – of the two approaches. The parental survey was carried out in order to make this comparison.

All appropriately guided surveys share general points which make them a good method for illustrating people's attitudes and opinions (Shaughnessy, Zechmeister, and Zechmeister, 2006). Social studies seldom deal with monocausal situations, since

it is rarely a single cause which leads to a specific outcome. Invariably, multi-causal forms are being addressed, where any outcome is the effect, not of one cause, but of a composite association of determinants (Oppenheim, 1992). Thus, it can be assumed that the effectiveness of dialogic teaching to develop children's thinking using the two identified approaches rests not only on pupils' conversation in primary school classrooms, but also on the extent to which this connects with family talk between parents and children. Thus, the parents' survey was conducted to gain parents' perspective of whether or not the participating children experience dialogic input using the two approaches, and how far moral issues are the subject of daily conversation between children and parents at home.

The survey employed a cross-sectional design, in which responses were obtained from parents of children in each of the participating age groups and experimental conditions in the main intervention study. The focus of a cross-sectional survey is 'description-describing' the traits of a sample, or the differences between two or more samples at a particular time (Shaughnessy et al., 2006). In this study, given two types of experimental groups in a total of six classes, each containing approximately 30 pupils, the base sample consisted of roughly 180 pairs of parents. All parents of students in the three year group classes were invited to participate in the survey, to ensure representativeness relative to the pupil sample, and the final study sample contained all those who agreed and returned the questionnaire.

The questions in the parents' survey were mixed closed and open-ended questions. Oppenheim (1992) states that free-response questions are easy to ask, difficult to answer, and still more difficult to analyse, whereas closed question can be attitudinal and factual. Shaughnessy et al. (2006) claim that the main advantage of free-response

questions is that they provide the respondent with greater flexibility than closed questions. In contrast, closed questions can be answered more quickly and easily, and less problems arise with scoring. Since the parents concerned may have been busy, impatient, and reluctant to take part in a survey, most questions in this survey were closed. However, since the parents might want to share more information, the survey contained some open questions to obtain more views from them. Since the teaching materials were related to moral education, the questions concerned conversation regarding daily morals between children and parents at home. The central idea was to acquire information on how far ethical and 'philosophical' issues were discussed in the home, under what context, and whether or not Confucian ideas or moral 'stories' ever form part of that discussion. The objective was to establish whether the supposed difference between the two in cultural resonance was actually borne out in parental conversations with children. In other words, it was intended to address the conditions which existed before the intervention.

In view of the predominance of closed questions, with fixed response options, most of the data lent itself naturally to quantitative analysis of response frequencies, and the association of these with other demographic characteristics, on which information was also requested. This made it possible to examine how far moral discussions and the currency of Confucian and more scenario-based dialogues within the home varied systematically with parents' social status, educational level and the age of children. Responses to open-ended questions were reduced to a simple set of category codes so that they could be treated in similar fashion.

#### **4.4 Interviews with Teachers**

The teachers' interviews provided a further method of examining the potential of

dialogic teaching. According to Flick (2007a), one methodological approach is not sufficient to address complex issues, and thus, the design may be broadened by applying more than one approach. This strategy is frequently discussed in terms of triangulation, with an emphasis on enhancing the informativeness of qualitative data. However, it may also be employed for expanding the range of knowledge gained by a piece of research, and this was the intended purpose here. In particular, the researcher interviewed educational directors and teachers in the participating primary schools, in order to gain their views on the potential of and barriers to dialogic teaching, and whether exercises based on the Analects were seen by them to present advantages relative to the Western-based materials promoted by the Taiwanese Ministry of Education.

In terms of the appropriate method of conducting interviews, Silverman (2001) notes attempts to consider interview questions and answers as ‘passive filters’ of realities concerning people’s views or identities (for example, as members of an ethnic group). In line with positivist stances, seen in this light interview data provides the opportunity to evaluate the ‘facts’ about the issue in hand. The key concern is to produce data which is ‘valid and reliable’, regardless of the research setting. In the present research, however, an effort was made to avoid this ‘passive filter’ conception, and to provide greater scope for participants to develop their thoughts via discussion with the researcher, by using semi-structured interviews. Greig, Taylor, and Mackay, (2007) declare that the most universally encountered research design is the semi-structured interview, which contains prompts or questions and includes set topics, but is contained by a framework which permits much scope for the interviewees to present their own ideas. Semi-structured interviews are broadly designed in a flexible format, either as a single approach or mixed with others.



According to Powney and Watts (1987), this is still a ‘respondent’s interview’, but according to Robson, the key point is that this approach strikes a balance between interviewee and interviewer. “Interviewers may have their shopping list of topics and want to gain responses to them, but they have considerable freedom in the sequencing of questions, in their exact wording, and in the amount of time and attention given different topics” (Robson, 2002, p. 278).

Robson (2002) mentions that, when recording interviews, the interviewer’s task is to attempt to encourage the interviewees to speak unreservedly and frankly, and that the interviewer’s own behaviour has a major impact on their enthusiasm to do this. Making a full record of the interviews is also crucial, and this can be done by taking complete notes at the time and/or by recording the interview. Whenever practicable, interviews are supposed to be audio-taped, since the tape offers a lasting record and permits the interviewer to focus completely on the interview. This was the approach adopted here, though over time, diverse hi-tech audio recorders have taken the place of tape recorders, and electronic MP4 recorders were used instead of tape recordings.

As mentioned above, the aim of the interviews was to examine teachers’ perspectives on whether dialogic teaching can be adapted in Taiwanese primary schools to apply either the traditional *Analects of Confucius* or moral dilemma stories to effectively develop Taiwanese children’s ability to think critically. Although most of the questions in the different interviews were more or less the same, some questions were framed slightly differently according to the interviewee’s position. Answers from interviewees were not limited, and they were allowed to talk freely and openly.

These interviews were implemented after the interventions using the *Analects* and

moral dilemma stories had taken place. However, since the school directors and teachers had to decide prior to the intervention whether their pupils were to be allowed to participate in this research, they were asked at this stage whether they would be willing to be involved in the interview. If they agreed, they were asked to sign the relevant ethics approval. The researcher then gave the interviewees a listing of the principal questions one day before the interview to give them time to reflect on the content.

In view of the semi-structured nature of the interview sessions, and thus the inevitable variability in the precise questions asked and the time devoted to different issues, a content-analytic approach was deemed to be inappropriate for the data obtained. Instead a form of thematic analysis was adopted, though one driven as much by the concerns identified by the research questions as by a grounded examination of response content, in order to maintain a relatively tight focus.

#### **4.5 Reliability and Validity**

Though a content-analytic, quantitative approach was adopted to much of the data collected in this research, that data was in itself predominantly verbal in character, and thus subject to many of the same concerns with respect to reliability and validity as much qualitative research.

In terms of reliability, Kirk and Miller (1986:72) state that:

Qualitative researchers can no longer afford to beg the issue of reliability.

While the forte of field research will always lie in its capability to sort out the validity of propositions, its results will (reasonably) go ignored minus attention to reliability. For reliability to be calculated, it is incumbent on

the scientific investigator to document his or her procedure. (Cited in Silverman, 2001, p. 227)

For Weber (1990), documentation of procedure alone is insufficient in the context of the kind of approach adopted here, however. He claims that three forms of reliability are related to content analysis: 'stability', 'reproducibility', and 'accuracy' (Krippendorff, 1980, p.130-154). 'Stability' refers to the extent to which the consequences of content categories are invariant over time, and this can be resolved when the same text is coded more than once by the same coder. 'Reproducibility', sometimes entitled 'intercoder reliability', refers to the extent to which content categorisation leads to the same result when the same content is coded by more than one coder. 'Accuracy' refers to the extent to which the categorisation of content corresponds to the norm or criterion, and this is the strongest type of reliability.

In terms of validity, Silverman (2001) claims that one form of validation is regarded as being particularly appropriate for the logic of qualitative study: to compare distinctive types of data (e.g. quantitative and qualitative) and diverse approaches (e.g. observations and interviews) to evaluate whether or not they back one another up, and are in a more general sense coherent. Also Hammersley (1990, p. 57) argues that "validity means truth: interpreted as the extent to which an account accurately represents the social phenomena to which it refers". Two features can help to simplify the concept of validity, the first of which is between validity as a connection between two sets of things (such as conceptions, variables, methods, and data), and validity as the generalisability of theories, consequences, and references (Brinberg and McGrath, 1982). The second, which is more precisely related to content analysis, is between the

validity of the categorisation plan, or variables founded on it, and the validity of the analysis concerning variables to their causes or results.

In terms of reliability, this research employed dialogic teaching and classroom conversation to implement two approaches to the development of children's critical thinking. The process of observational data collection utilised audio recording, and the speech was transcribed in detail and thoroughly according to Jefferson's transcriptional style. Transcripts were then coded using a consistent and explicit scheme, derived from patterns apparent in past research (and so normative in this sense) and checked for inter-rater reliability. These methods were all piloted to make sure they were usable and reliable. In addition, a test of children's first language achievement scores was used to assess the equivalence of children exposed to the two forms of intervention. The post-test essays provided a means of checking how far effects observed during the course of the intervention corresponded with those seen in other activity.

In terms of validity, the teacher interviews and parent survey were employed to evaluate both the potential of the two approaches to develop children's critical thinking from another perspective; and to examine whether the case on which the research design rested was well-founded in terms of children's culturally-influenced experience within the home. Both provide important means of cross-checking the validity of the intervention data.

#### **4.6 Process of data collection**

Data collection was divided into two stages, one of which was a pilot study, and the other the main intervention study. Sapsford and Jupp (1996) state that a pilot

examination is a small-scale exercise undertaken before the main investigation, aimed at measuring the sufficiency of the research design and the instruments to be employed for data collection. Piloting the data-collection tools is necessary, whether interviews or questionnaires are employed. In order to work effectively, the pilot sample has to be representative of the diverse individuals which the main study aims to cover.

Thus, the pilot study was implemented in part to investigate the efficiency of the research instruments. However, a more fundamental consideration was trialling the nature of the key intervention itself. Combining dialogic teaching with the *Analects of Confucius* to develop children's thinking is a markedly different approach to use of the *Analects* in the typical traditional Chinese teaching methods of recitation and memorisation without interaction. Also, the text of the *Analects* uses conventional classical Chinese words, which are not easy for pupils to understand. It was therefore crucial to start by assessing the viability of this novel approach to use of these materials. In contrast, the content of *Stories for Thinking* is more readily understandable and attractive children's stories. There was therefore less need to pilot the intervention using these materials, and only the combination of dialogic teaching with the *Analects* was examined. It was also deemed desirable to pilot the semi-structured interview schedule at this point too, in order to assess its suitability for generating responses that would shed useful light on the questions addressed by the research.

Following this, once the pilot study had established the viability of the basic approach, the main study conducted dialogic teaching with the *Analects* and *Stories for Thinking* respectively in six experimental groups, as well as collecting survey

responses from the parents of participating children, and interview data from teachers and directors within the participating school.

#### **4.7 Role of researcher**

The role of the researcher in this study was that of a teacher-researcher. This empirical research was related to an additional syllabus, which involved teaching the *Analects* directly to children in real primary schools in Taiwan. According to Maclean and Mohr (1999), taking the role of teacher-researcher enables researchers to investigate both the students' and their own hypothesis about these roles. When they guide their classroom in approaches which challenge the conventional roles of student and teacher, they are also setting the stage for investigating the issue of power. As a teacher, their power conventionally comes from their position as an adult, their preparation for their status as teacher, and the ethical accomplishment of their professional responsibilities. These resources of power do not shift when they guide study in their classroom, but their study position permits them to investigate what they evaluate, whilst examining their hypotheses as a researcher from the perspective of an informed practitioner. Therefore, the role of teacher-researcher made it possible to conduct this empirical research more effectively.

#### **4.8 Ethical issues**

In terms of the right of the participants, this research gave full consideration to the participants' privacy, feelings, and thinking. In respect of their right to privacy, their names are kept anonymous in the reporting of the research. In consideration of their feelings and thinking, the researcher accepted their opinions, and if they felt uncomfortable during the period of the fieldwork, they could stop at any time and withdraw their participation. Additionally, this research applied the ethical guidelines

of BERA, and Articles 3 and 12 of the United Nations Convention on the Rights of the Child. Article 3 demands that, in all actions concerning children, the best concerns of the child must be the main consideration. Article 12 demands that children who are able to shape their own viewpoints should be accorded the right to convey their opinions liberally in all matters which influence them, corresponding to their age and maturity. Consequently, children should be assisted to give wholly informed consent, and this should be borne in mind.

In respect of informed consent, the researcher explained the research to the main participants, who were seven to twelve-year-old students, and discussed whether or not they wanted to take part. The researcher also made preliminary visits to the school and communicated with them, in order to build a relationship of trust. Additionally, the researcher gave a letter of informed consent to the students' parents to obtain their agreement to allow their children to participate in this research. The secondary participants were parents and teachers, and the researcher sent them a letter informing them about the contents and purpose of the research. If they agreed to take part, they needed to provide the personal information requested, and signed the letter as an agreement after they had read the informed consent, and returned the letter to the researcher. With regard to the teachers, it was agreed that the transcript of their interview would be sent to them, and that the results of the analysis would be shared with the collaborating schools as further ideas to plan their future curriculum. The researcher also had to guarantee supervision of the pupil participants, and conform to the legal requirements with regard to working with the school children, parents, and teachers.

All aspects of the research were subjected to ethical review using the normal

procedures applied by the Institute of Education, University of London, and approval was granted before any data collection took place.

#### **4.9 Summary**

The aim of this chapter was to describe and critically argue the methods used in this research to address the questions in the context of the study. The following chapters report the conduct and results from each empirical study component before discussing the overall findings.



## Chapter 5: Pilot Study

### 5.1 Introduction

This pilot study tested, in a real-world setting, the intervention design proposed as a major component of the research, against these pedagogical aims: 1) efficiently employing dialogic teaching with the *Analects* to cultivate three age groups of Taiwanese children's critical thinking as applied to moral reasoning; 2) developing children's argumentative skills by means of a small group discussion approach to exploratory talk; 3) further cultivating children's ability to think critically by means of whole classroom talk. It was also used as a context in which to trial the semi-structured interview schedule used with teachers. Procedure, outcomes and an assessment of the viability of the two components are addressed in turn in the following sections.

### 5.2 Sample, materials, and process of pilot study

The study was conducted between the middle of November 2008 and the beginning of January 2009 in a public primary school in Taoyuan, Taiwan. The procedures regarding school invitation, recruitment of teacher and pupil participants, and ethical conduct outlined in Chapter 4 all applied here. Pupil participants were recruited from three year groups in this school, 7 to 8 year-old pupils in Class A, 9 to 10 year-old pupils in Class B, and 11 to 12 pupils in Class C. The duration of this pilot was four weeks, with one 40 minute lesson taking place every week (this is the national regulation on lesson length in primary schools).

The teacher-researcher provided a sentence about learning or morality from the *Analects of Confucius* at the start of each lesson, and guided the students to discuss

the meaning behind the sentence within small groups of five to six pupils, and subsequently across the whole class. The specific sentences from the *Analects* that were used were chosen according to the age of the class. The full list of those employed with each age group is shown in Appendix II. Given the inevitable variation in literacy and comprehension ability of the different age groups, the researcher chose two short sentences without deep meaning which would be intelligible to the youngest participants for each of their lessons. This same strategy was applied in the first two lessons for the older children, but subsequently the selected target sentences became a bit longer with deeper connotation.

Within their groups, the pupils were required to discuss the connotation of the target sentence amongst themselves, although with periodic support from the teacher for groups in Class A and Class B, where past experience of such discussion was more likely to be limited. Following the small group work, the consensus reached by each group was presented to the whole class. One small group from each class was chosen to have their dialogues during the first stage of the exercise recorded across the four lessons, as a means of checking on the quality of discussion produced by the materials. Conversation between the teacher and pupils during the whole class element of each weekly lesson was also audio-recorded.

In addition, teachers' interviews were conducted at the end of pilot data collection, involving four teachers, one principal, one educational administrator, and two tutors in this school. They were asked to present their views of the applicability of Western educational theory to Taiwanese education, the methods that might be used to develop children's reasoning, the value of the *Analects of Confucius* within education, the viability of dialogic teaching within the current curriculum and existing pedagogy,

and the potential of the combination of dialogic teaching with the *Analects* as a method to develop children's reasoning. The list of interview questions is shown in Appendix III. The duration of each interview was between 20 and 50 minutes.

### **5.3 Analysis of dialogue**

The recorded small group and whole class dialogues were transcribed and then coded in their entirety using the scheme described in Chapter 4.2.4.2. All dialogue turns were given at least one code; multiple codes were given where a statement met more than one of the defined criteria.

The following sections provide an overview of children's group talk and the whole class conversation within each age group. Full examples of children's conversation are shown in Appendix II.

#### ***5.3.1 The analysis of Class A's conversation***

Generally speaking, Class A's conversation in the four lessons exhibited the classic pattern of Initiation-Response-Feedback (IRF), in which dialogue turns are initiated by the teacher posing a question in some form, a pupil provides an answer to this, and the teacher comments on this response, effecting closure (Hardman, 2008; Lemke, 1990; Mercer, 1995; Wood, 1992). Sustained exchanges were unusual, perhaps because of the lack of familiarity of children in this age group with interactions of this kind in classroom settings. The following sections outline the interaction between Class A pupils and the teacher-researcher across the four lessons in more detail.

### 5.3.1.1 Teacher-researcher conversation in Class A

**Table 5.1.** Frequency of teacher-researcher input to group and class dialogue by coding category in Class A.

Categories \ Date	Lesson one	Lesson two	Lesson three	Lesson four
Proposition	5	3	1	1
Disagreement	0	0	0	0
Agreement	10	0	0	0
Explanation	6	0	0	0
Elaboration	3	0	0	0
Reference back	1	0	0	0
Resolution	2	0	0	0
Question	26	23	27	44
Contact	42	18	30	62
Uncodable	0	0	0	0

The frequency of teacher's talk in Class A

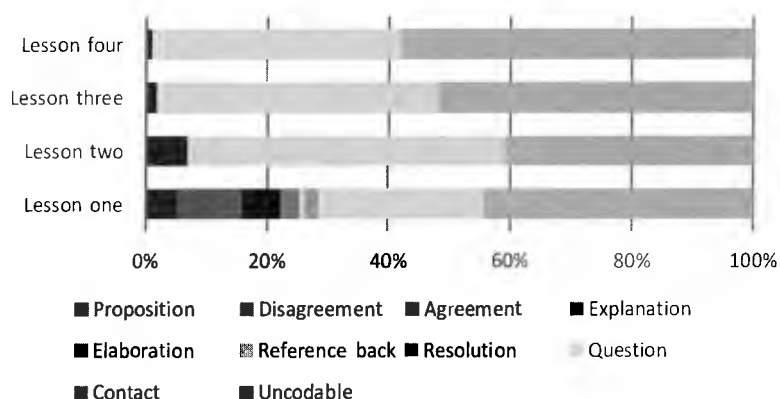


Table 5.1 illustrates the frequency of the different aspects of the teacher-researcher's input to the group and class dialogue across the four lessons. Contact was the most common form of input throughout all the lessons. The teacher always emphasised connection between statements in interaction with the pupils. Besides this, questions

were the main technique used to stimulate interaction with the pupils. The occurrence of propositions, in which the teacher actually put forward ideas decreased over time, as did agreement and explanation. Elaboration, reference back, and resolution merely occurred in small amounts in the first lesson, and they did not take place at all in other lessons. Disagreement did not occur at all. The teacher tended to use positive ways to encourage children's reasoning. In general, then, the teacher obviously produced open-ended questions to encourage children's thinking and talking. In the first lesson, even though a great deal of questioning was implemented, other argumentative skills were employed in some ways. However, in the subsequent three lessons, the teacher tended to rely exclusively on open-ended questions to explore the children's reasoning. There is little sign of other argumentative skills being modelled by the teacher's input to the conversation.

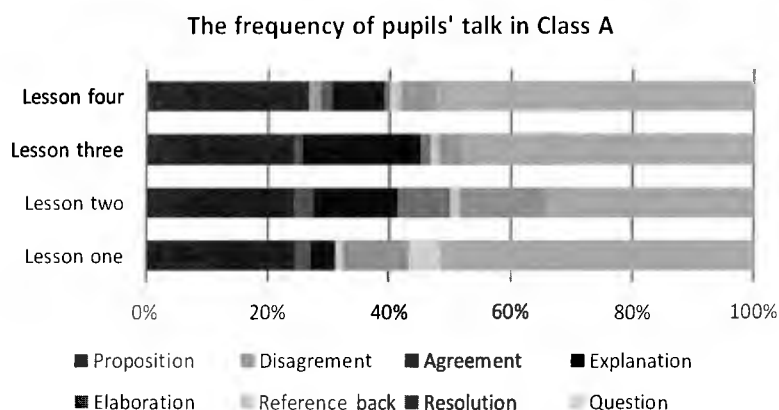
#### *5.3.1.2 Pupils' conversation in Class A*

Table 5.2 illustrates the occurrence of the different categories of children's talk in the group and class dialogues. Again, contact is the most frequently occurring type of input throughout all lessons, indicating that the pupils did at least talk connectedly to either the teacher or the peers in the conversation. In addition, the large number of propositions showed that the pupils proposed ideas rather than applying other skills in the dialogue, and providing their thoughts in this way seemed to increase in the final lesson. Explanation in support of statements occurred a few times in the first lesson, but became more frequent subsequently. Resolution occurred sometimes in the first two lessons and the last lesson, although it happened infrequently in the third lesson. Questions appeared a few times in the first lesson, but not in the other three lessons, suggesting the students did not prompt one another in the discussion. In terms of other argumentative techniques, explicit agreement occurred infrequently in the four

lessons; elaboration occurred a few times in the second lesson, and took place only once in the last two lessons; disagreement appeared in the last lesson. Overall, it can be seen that Class A pupils progressively proposed and explained their thoughts in collaborative conversation throughout the four lessons. However, although they used other negotiating techniques to some extent, there was no systematic improvement across the lessons. Therefore, in terms of critical thinking, it is difficult to recognise any strong progression in Class A pupils' reasoning: in Mercer's terms they only implemented cumulative talk in these four lessons.

**Table 5.2.** Frequency of pupil input to group and class dialogue by coding category in Class A.

Categories \ Date	Lesson one	Lesson two	Lesson three	Lesson four
<b>Proposition</b>	18	14	15	28
<b>Disagreement</b>	0	0	0	2
<b>Agreement</b>	2	2	1	2
<b>Explanation</b>	3	8	12	9
<b>Elaboration</b>	0	5	1	1
<b>Reference back</b>	1	1	1	2
<b>Resolution</b>	8	8	2	6
<b>Question</b>	4	0	0	0
<b>Contact</b>	38	20	30	55
<b>Uncodable</b>	0	0	0	0



### 5.3.2 The analysis of Class B's conversation

In Class B's conversation, the teacher-researcher tended to decrease her input, expecting the pupils to discuss collaboratively with less intervention from her. The pupils appeared in turn to produce increasing amounts of negotiation in their discussion.

#### 5.3.2.1 Teacher-researcher conversation in Class B

**Table 5.3.** Frequency of teacher-researcher input to group and class dialogue by coding category in Class B.

Categories \ Date	Lesson one	Lesson two	Lesson three	Lesson four
<b>Proposition</b>	2	1	1	1
<b>Disagreement</b>	0	0	0	0
<b>Agreement</b>	0	0	0	0
<b>Explanation</b>	0	0	0	0
<b>Elaboration</b>	0	0	0	0
<b>Reference back</b>	0	0	0	0
<b>Resolution</b>	0	0	0	0
<b>Question</b>	7	6	3	5
<b>Contact</b>	12	12	9	10
<b>Uncodable</b>	0	0	0	0

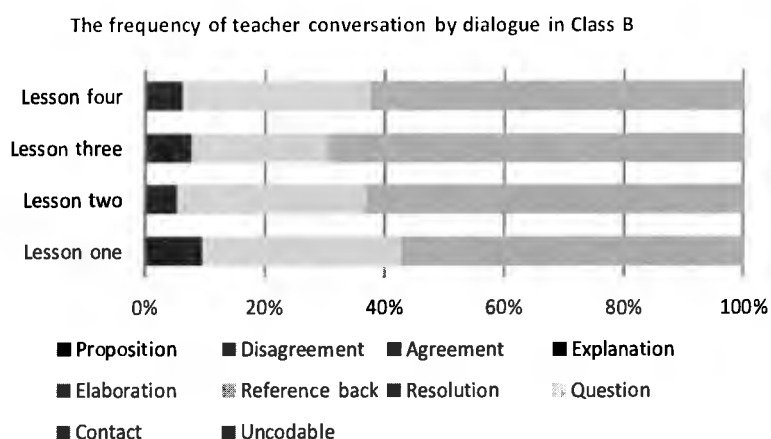


Table 5.3 shows the frequency of dialogue types within the teacher-researcher's conversation across the four lessons. As with Class A, contact was consistently the most frequent form of input, although it somewhat decreased in lessons three and four, which indicates that the teacher produced more talk in the first two lessons. After that, she reduced her input gradually, also providing more questions in the first and second lessons. The number of questions was substantially less than in Class A, suggesting the pupils needed less prompting of this kind for dialogues to be initiated. Looking at the content of the dialogues, questions occurred primarily in the small group conversation in lessons one and two, and it was here that they declined in the third and fourth lessons. In the whole class conversation, the pattern was in contrast the same across the four lessons. Here, the teacher simply offered guidance and brief positive feedback to move the activity along. She did not actively encourage discussion in the class conversation. Although propositions occurred in all four lessons, they were very small in number. In general, then, there were signs that the teacher implemented some aspects of scaffolding in the first two lessons, but reduced her intervention after that and tried to leave pupils to discuss autonomously.

#### *5.3.2.2 Pupils' conversation in Class B*

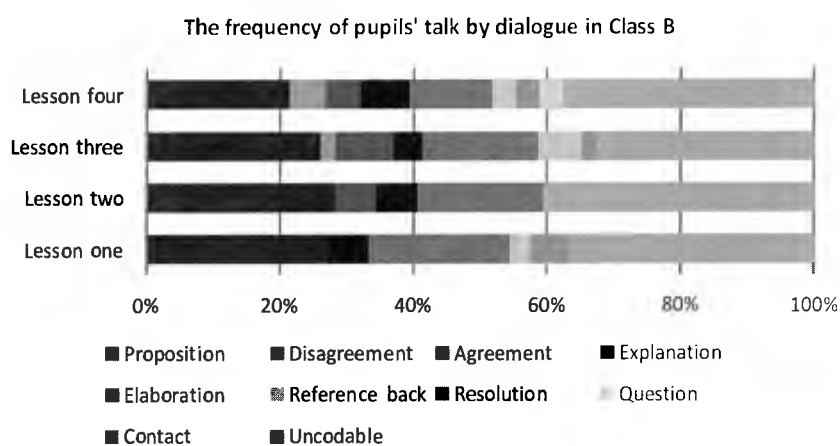
Table 5.4 demonstrates the occurrence of dialogue categories in the pupils' talk in the four lessons. Once more, contact was the most frequent form of input, and this increased gradually from the first to the last lesson, reflecting the fact that the pupils produced increasingly more conversation lesson by lesson. Propositions were the second highest code in all lessons, as in Class A, and gradually increased, which means that the pupils became more willing to offer their ideas in the discussion. Unlike Class A, elaboration was common, and the third highest code in all four lessons, though this was stable rather than increasing. Other argumentative



techniques, including disagreement, agreement, explanation, reference back, resolution, and questions, all tended to steadily improve. There were only infrequent signs of debate in the first three lessons, however, if disagreement and explanation are taken as a marker of this. Thus, in these three lessons, it only can be said that the pupils increasingly exhibited cumulative talk with the occasional instance of exploratory talk. Nevertheless, some disputation was found in the fourth lesson. The pupils not only offered more ideas, explanations, and agreements, but also made a few more disagreements and asked questions. They applied all of the argumentative skills in lesson four, and began to implement exploratory talk at this point. On the whole, then, the pupils gradually progressed from cumulative talk to exploratory talk. However, the progression was somewhat slow. In addition, when reviewing the dialogues in the four lessons, the pupils were found to have produced only brief discussions in the small group dialogue. Also, they did not exhibit any debate in the class conversation, even in the fourth lesson. Thus, although the pupils' talk shifted somewhat from cumulative talk to exploratory talk, it cannot be said that their reasoning developed substantially towards critical thinking within the period of the four lessons.

**Table 5.4.** Frequency of pupil input to group and class dialogue by coding category in Class B.

Categories \ Date	Lesson one	Lesson two	Lesson three	Lesson four
Proposition	9	9	12	12
Disagreement	0	0	1	3
Agreement	0	2	4	3
Explanation	2	2	2	4
Elaboration	7	6	8	7
Reference back	1	0	3	2
Resolution	2	0	1	2
Question	0	0	0	2
Contact	12	13	15	21
Uncodable	0	0	0	0



### 5.3.3 The analysis of Class C's conversation

With Class C, the teacher-researcher aimed to allow pupils to talk autonomously, so she increasingly reduced her conversation. The Class C pupils' conversation showed correspondingly greater progression towards critical thinking across the four lessons.

### 5.3.3.1 Teacher-researcher conversation in Class C

**Table 5.5.** Frequency of teacher-researcher input to group and class dialogue by coding category in Class C.

Categories \ Date	Lesson one	Lesson two	Lesson three	Lesson four
Proposition	1	1	0	0
Disagreement	0	0	0	0
Agreement	0	0	0	0
Explanation	0	0	0	0
Elaboration	0	0	0	0
Reference back	0	0	0	0
Resolution	0	0	0	0
Question	10	5	5	2
Contact	13	8	12	8
Uncodable	0	0	0	0

The frequency of teacher conversation by dialogue in Class C

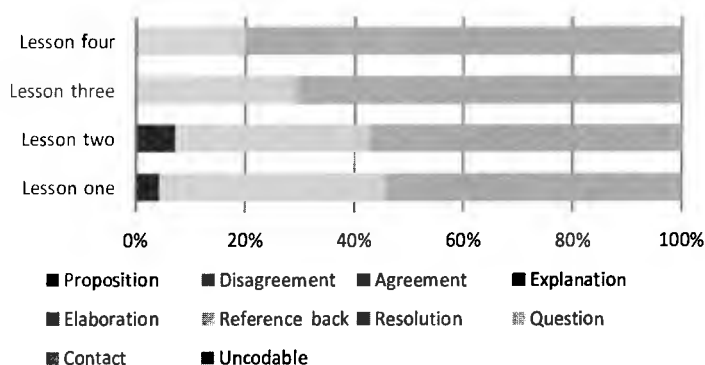


Table 5.5 illustrates the occurrence of teacher-researcher talk in Class C's lessons. The teacher clearly produced the most utterances in lesson one, and then as the lessons progressed, she reduced her conversation gradually. Contact was once more the most frequent form of input across the four lessons, and did not vary much throughout them. In contrast, the frequency of questions dramatically decreased over the four lessons. The number of propositions was minimal. The pattern is consistent therefore

with the teacher encouraging Class C pupils to carry out autonomous collaborative discussion. In doing so, she only provided brief guidance to move the process along in the pupil's small group discussion and the class conversation.

### 5.3.3.2 Pupils' conversation in Class C

**Table 5.6.** Frequency of pupil input to group and class dialogue by coding category in Class C.

Categories \ Date	Lesson one	Lesson two	Lesson three	Lesson four
Proposition	11	12	12	17
Disagreement	0	1	2	2
Agreement	2	5	3	4
Explanation	5	4	6	11
Elaboration	6	7	9	8
Reference back	3	5	8	8
Resolution	0	1	8	7
Question	0	3	7	6
Contact	15	24	31	32
Uncodable	0	0	0	0

The frequency of pupils' talk by dialogue in Class C

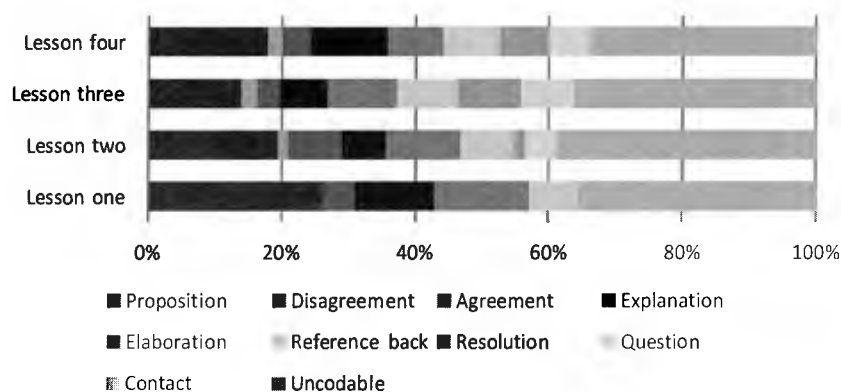


Table 5.6 shows the frequency of dialogue categories in Class C pupils' talk over the four lessons, and it can be seen that the pupils evidently produced more differentiated

types of conversation as the lessons went on. Again, the most frequent dialogue type is 'contact', which gradually increased over the four lessons, indicating that pupils began to interact more with one another. Propositions were the second highest code once more, higher than other argumentative skills. However, agreement, explanation, elaboration, and reference back all gradually increased. Disagreement, resolution, and questions did not appear at all in the first lesson, but began to appear increasingly from the second lesson onward. Even though disagreement, agreement, explanation, elaboration, reference back, resolution, and question were not employed as much as proposition by the pupils, they were still used with significant frequency in the argumentative conversation. Although it cannot be said for certain that group C pupils' reasoning developed progressively toward critical thinking within four short lessons, the pupils increasingly approached exploratory talk.

#### **5.4 Comparison of dialogue in the three classes**

As can be seen from Tables 5.1, 5.3 and 5.5, the teacher-researcher provided substantially more talk in Class A than in Classes B and C throughout the four lessons. Despite this, though, the essential characteristics of the teacher's input appeared to remain very similar, with contact being the most frequent code for each class, and questioning the second most frequent. There were more subtle differences, though: questions gradually increased in frequency in Class A across the four lessons, whereas they decreased slightly in Classes B and C. In addition, the teacher made somewhat greater initial use of propositions in Class A.

Similarly, as far as the other codes are concerned, the teacher only used agreement, explanation, reference back, and resolution on a few occasions in the first lesson in Class A. These forms of input did not occur at all in any of the following three

lessons, and were not applied at any point in the teacher's conversation in Classes B and C. The implication is that the teacher was engaged much more directly in the initial group conversation in Class A, modelling the kind of input that was sought from pupils. Likewise, although these types of input disappeared, her engagement with Class A gradually increased over the four lessons. In contrast, the input in Classes B and C was more light touch, with the teacher initially employing questions and attempting to connect the pupils' conversation but with these turns then decreasing, especially questions in Class C, which dramatically reduced between the first and the final lesson. This was the principal difference between Class B and Class C: in the former, some attempt to direct pupil dialogue by use of questions was present throughout; in the latter, the teacher's talk appeared to switch rapidly to providing brief guidance to move the activity along.

In summary, then, the teacher offered a great deal of talk to stimulate and encourage the pupils' dialogue and thoughts in Class A. In Class B, she directed her efforts to helping pupils carry out collaborative talk more independently. In Class C, she essentially provided an environment for the pupils' conversation to proceed autonomously.

These differences are underlined by considering the frequency and type of pupil talk in Classes A, B and C, as shown in Tables 5.2, 5.4 and 5.6. Although looking at Table 5.2 it appears that Class A pupils' produced more talk than those in Classes B and C, in fact the pupils in Class A thoroughly depended on the teacher's support. The utterances from the teacher amounted to nearly half of all those made throughout the four lessons. Moreover, the overall pattern of Class A pupils' talk was highly related to the teacher's input. When the teacher offered more stimulation in the first lesson

and the final lesson, Class A pupils also provided more talk. In contrast, the teacher produced less talk lesson by lesson in Classes B and C, whereas the pupils' input *increased* over the four lessons. Class C pupils in particular evidenced this pattern, and they also produced much more conversation than Class B.

This said, there were similarities between the three classes. Contact was the most frequent code throughout the four lessons in all three, indicating that the students in each case were capable of connected exchange. In addition, propositions and explanations were offered regularly and increasingly in all three classes. This can be seen as evidence that regardless of age the children began over time to propose more ideas and to provide more thorough and clear thoughts to build up reasoning. The key difference was the relative balance of these aspects of the pupils' conversation. In Class A, basic connection was the dominant feature. Class B pupils did not in fact provide as many explanations as those in Class A (or C), but these and propositions were proportionately a greater feature of their dialogue, and in this sense they showed progress over Class A: in general, it can be supposed that children's developing critical thinking abilities initially manifest as explicit propositions and explanations. In addition, the pupils in Classes B and C provided elaboration frequently in every lesson. Whilst Class A pupils provided some elaborations in the second lesson, these were a much less common feature, and may only have appeared at all because of the teacher's support.

In terms of other more refined argumentative skills, the pupils in Class A rarely used other types of move. Class B pupils could not be seen to have applied negotiating techniques frequently, but elements of these did appear somewhat more in the last lesson. This may suggest that Class B pupils were getting more used to discussing

issues with peers because of the lack of the teacher's intervention as the lessons progressed. In contrast, the pupils in Class C used argumentative abilities often and increasingly with less teacher interruption as the lessons progressed.

Overall then, a consistent pattern in children's ability to think critically can be identified. The 7 to 8 year olds in Class A exhibited basic abilities which slightly increased with a lot of teacher support towards a form of cumulative talk. The pupils aged 9 to 10 in Class B improved their cumulative talk toward exploratory talk across the four lessons. In contrast, the pupils aged 11 to 12 in Class C showed clearer evidence of reasoning ability, which increased throughout the four lessons as they made increasing use of exploratory talk. Even here, however, there were few extended debates. Thus, it cannot be said that Class C pupils' critical thinking progressed far during this short period of four lessons.

### **5.5 Teachers' interviews**

As noted earlier, the purpose of interviewing educational directors and teachers in the participating schools was to gain their views on the potential of and barriers to dialogic teaching, and whether exercises based on the *Analects* were seen by them to present any advantages. The key concern of the pilot study was, in addition, to check the utility of the interview schedule that had been devised to meet this purpose.

Four interviewees shared their views about Western concepts of education, their current teaching, children's reasoning, and teaching the *Analects of Confucius* in primary schools in modern Taiwan. The interviewees were one principal, one educational administrator (i.e., the person who organises and manages the administration, support systems and activities that facilitate the effective running of



the school) and two teachers in the participating primary school. The principal had been the head of a primary school for 5 years, and had nearly 18 years' teaching experience. The educational administrator had been in this position for about 3 years, and had 12 years' teaching experience. One of the teachers (A) had been a teacher for approximately 10 years, and the other (B) had been teaching for about 6 years. Recordings of the interviews were transcribed, and then key points of information with regard to the research questions were identified and collated, along with any other themes that emerged from across the interviews. These are outlined below.

#### *5.5.1 Western concepts of education*

In terms of the influence of Western concepts in primary school education in Taiwan, the interviewees claimed that ideas about the development of a child's reasoning in Taiwan had definitely been impacted on by Western theories in some ways. Both the Principal and the Educational Administrator mentioned that the most famous principle which has affected Taiwanese education is John Dewey's 'Learning-by-doing'. They saw this as emphasising that, even though intelligence is innate, children's learning environment, society, and interactions with parents, teachers, and peers are the most important influences on learning. The abilities and knowledge which children obtain are integrated fully into their lives as citizens and human beings, and the cultivation of their reasoning is based on their life experience. The more children experience, the better should be their ability to think.

The Administrator also cited Vygotsky's scaffolding theory [sic], which maintains that teachers should support the students in their learning, although they cannot offer solutions to students' problems. They can only assist them to resolve them, and when students' learning ability has matured, teachers can stop the intervention. He saw this

as a very important principle for teachers to adopt in developing pupils' reasoning in modern Taiwanese schools. He distinguished differences between traditional Chinese teaching and Western approaches, saying that the conventional teaching principle is to use authority to guide the students. In this approach, pupils should listen to teachers and be well behaved in class, being controlled by the teachers' power. This is why Taiwanese pupils are shy and afraid of talking in the classroom. However, in Western education, teachers encourage and support students to articulate their thoughts and introduce them into discussion in the classroom, so that pupils are happy to share their ideas openly in front of peers and teachers in the class.

#### *5.5.2 The development of children's reasoning*

In terms of promoting children's reasoning, the Principal believed that teachers should ask pupils questions because surely, pupils must have at least some knowledge, and if they are asked a question, they can then carry out in-depth thinking by discussion. In the main, if teachers offer brief comprehensible prompts in the beginning, students are able to easily work out the answers with their knowledge. Following this, teachers should provide some big questions, and pupils should determine an appropriate explanation through discussion. These are crucial ways of developing a child's reasoning.

This approach could be formalised by teachers into use of the 'heuristic method', 'values clarification', and the 'discussion method'. The heuristic method is when teachers ask big open-ended questions of pupils, and offer them time to think and explore the answers. This is a very important process in training children's thinking. Next, this could be combined with values clarification and the discussion method, and this combination would be extremely effective in developing students' reasoning. If

teachers could apply this process in the beginning of teaching, pupils would adapt to this approach, step by step. Students' reasoning would expand more quickly toward critical thinking, and this could help to develop their character and value construction.

The Educational Administrator avowed that developing a child's reasoning depends on the teaching methods used. Teachers should not implement one-way teaching only. They should guide the students to participate in the class. Pupils need to be encouraged by their teachers to explore their creative thoughts during class talk. Therefore, the best way to cultivate children's reasoning is to explore their creative thinking while teaching.

### ***5.5.3 Constraints on developing reasoning***

All of the interviewees believed that a child's reasoning should be developed throughout all classes and subjects. However, the Principal mentioned that, in terms of the limited class time and the pressure of the teaching schedule, she understands that it is difficult for teachers to train children's reasoning in every lesson. On the other hand, as teachers, they should know how to manage their teaching methods to guide students to have discussion in the class on some occasions.

The Educational Administrator agreed that he knew that teachers work under very stressful conditions with a multi-curriculum, and that they are expected to handle diverse subjects in their classes. It is not easy for them to design different teaching plans in one day, so the majority of teachers only apply one-way instruction in their classes. He said that he is always reminding his teachers to upgrade their teaching methods, otherwise pupils' reasoning and their learning ability may improve rather slowly. Teacher B also said that teaching is restricted by time limitation and an

onerous curriculum schedule. Therefore, it is very difficult to implement use of the heuristic method, values clarification and the discussion method in all subjects. Teachers are more likely to introduce discussion methods to some subjects, such as maths, science, life, and a combination programme. For example, in a combination programme, teachers are supposed to determine some issues of concern for students, and then guide all of the pupils to discuss these issues with the whole class. Afterward, the teacher displays different reasonable conclusions about these issues on the blackboard, and pupils vote to choose the most appropriate one. The declaration with the highest number of ballots is the consensus at the end of the discussion. Because of the limited class-time, it is practically difficult to conduct a small group discussion, and thus, this is very rarely applied in the classroom.

#### **5.5.4 The *Analects of Confucius***

All of the interviewees believed that these were essentially a conversation. The *Analects of Confucius* compounds many ancient Chinese statements, both brief and elaborated, which are sure to greatly enlighten people in modern society. However, the sentences in the *Analects of Confucius* are difficult for children, and if teachers are to apply the *Analects* in teaching children in primary schools, the sentences must be explained well. The *Analects* are not one of the compulsory subjects in the current curriculum, and most primary school teachers have never applied them at all in teaching their pupils. Undoubtedly the *Analects of Confucius* may cultivate pupils' moral education, but if teachers employed them with pupils, it was just as extra reading. The teachers read the *Analects of Confucius* to pupils, and pupils merely recited the sentences by themselves without an explanation, as a workshop before the class started every morning.

In terms of the classical words in the *Analects*, the Administrator and teacher B believed that students above the age of 9 were capable of learning the *Analects of Confucius*, but that they were not appropriate for younger children because of their low level of literacy. Nevertheless, the Principal claimed that all different aged pupils in primary school are capable of learning the *Analects of Confucius*, depending on the teaching methods applied in the class. For example, in terms of young pupils, teachers may exploit the story of the *Analects of Confucius* in teaching and learning, since this is an easy way to teach young students the meaning behind the sentences in the *Analects*.

#### ***5.5.5 The use of dialogic teaching***

When asking their view of the use of discussion methods to develop children's reasoning, all of the interviewees considered that applying discussion methods in teaching is very helpful to develop pupils' reasoning. If pupils' reasoning is enhanced, their critical thinking is sure to increase accordingly. When students increase their ability to think critically, their learning ability will definitely progress, and as a result, their learning achievement will gradually be further promoted. However, teacher B argued that it was difficult for teachers to implement the activity of discussion in the class because of limited time and the stress of having to teach diverse subjects. However, she carried out whole class discussions for some subjects at least, such as maths and integrated programmes.

#### ***5.5.6 Combining the Analects with dialogic teaching***

Teacher B said "I do not think that this approach can efficiently progress pupils' reasoning. I would not consider using the *Analects of Confucius* to train children's reasoning. I prefer to apply maths or integrated programmes to develop pupils'

reasoning, which are more effective, although it is not a bad idea to combine the *Analects of Confucius* to cultivate pupils' reasoning by classroom discussion." In contrast, the Principal and the Administrator considered that developing children's reasoning through discussing the *Analects of Confucius* in the classroom is a good method. Furthermore, the Principal stated that this approach may help explore a new way to teach the *Analects of Confucius* in primary school education. Also, it can prove that it is possible to use every subject to develop children's reasoning in some way, not just mathematics or science. However, if the *Analects of Confucius* were applied to develop children's reasoning by teaching and learning via discussion, sufficient clues must be offered to pupils. For instance, providing photos could be helpful for pupils to take part in an inferential discussion to produce a logical explanation of a sentence, although this technique is only suitable for older children, who possess literary maturity and sufficient knowledge to discuss the meanings of sentences based on photos. Younger children would need stories to be integrated with the sentences and photos, since these would be very useful to promote the awareness of young pupils of the meanings behind the sentences in the *Analects of Confucius*, especially the simpler ones.

#### 5.5.7 Summary of the interview responses

The above views represent crucial points from the teacher interviews, based on their many years of teaching experience. They provided differing viewpoints regarding application of the *Analects of Confucius* to develop children's reasoning via classroom talk. In general, all of the interviewees believed that this approach could be regarded as reasonably creative method of cultivating pupils' reasoning in primary schools in Taiwan. However, the materials and teaching plan should involve sufficient time for classroom discussion to get the activity moving. Otherwise, students' reasoning would

not improve progressively using this approach. These views are helpful when reviewed with reference to evidence from the classroom intervention pilot work, for further development of the main study design.

### 5.6 Summary of Pilot Study outcomes

According to the grounded theory of Mercer (1995, 1996) and CR of Reznitskaya et al. (2009), there are three ways of talking and thinking, and all were exemplified in the intervention lessons. First of all, in Class A (the youngest age group), most pupils proposed ideas and to some extent explained them further. However, they did not apply other argumentative skills, and thus they merely achieved *cumulative talk* in their four lessons. One implication of this is that in the main study, the teacher-researcher should urge students to use more argumentative techniques in their talk.

Secondly, in Class B, the pupils applied argumentative skills a little better than Class A pupils, and with less teacher support. However, they did not produce obvious debates in the small group discussion. Therefore, it can only be said that Class B pupils gradually improved their cumulative talk toward *exploratory talk* in the four lessons. The teacher-researcher should therefore give pupils of this age more support to stimulate more disputes in the small group discussion in the following fieldwork.

Thirdly, Class C pupils applied argumentative skills better than the other two groups, without the teacher's support. Nevertheless, *disputational talk* only occurred at all in the last two lessons. Therefore, it can only be said overall that Class C pupils progressively developed argumentative abilities towards refining exploratory talk. The development of Class C pupils' thinking did very slightly improve toward more

critical thinking in the short period of four lessons, though. In further work, the teacher should give pupils of this age appropriate support to inspire more actual debate in the small group discussion.

Some other points of importance also emerged. None of the three classes engaged in any interactive discussion in the whole class talk. They merely presented the consensus from the small group discourse. Therefore, there is a need for the teacher to inspire further discussion to generate a consensus across all of the groups in the main study. Interestingly, this missing element in the pilot is perhaps the one element of dialogic teaching that does occur with any frequency in Taiwanese primary classes. According to the teachers' interviews, they understand the theory of applying dialogic teaching to develop children's thinking, but they rarely use it, and merely employ it to do a certain amount of whole class discussion. Some teachers only apply dialogic teaching to maths and integrated programmes, and they do not encourage pupils to talk in small groups, instead guiding pupils in the whole class talk. These claims suggest that it ought to be relatively straightforward to extend the small group discussion into the whole class discussion, though the lack of spontaneous extension in the pilot perhaps indicates it is not in fact such a common experience as was claimed. This in turn suggests that although in general the interview sessions appeared to work well, and to generate informative responses, there may be a need to dig deeper in the main study with regard to teachers' actual knowledge and experience of dialogic methods. Finally, teachers agreed to some extent that dialogic teaching with the *Analects* could effectively develop children's critical thinking. However, they argued that additional materials are needed to use this approach with young children, such as pictures and stories.



According to the results, then the pilot study intervention did not work particularly effectively to cultivate children's thinking. However, there were sufficient positive signs that dialogic teaching could be implemented using the *Analects* to help Taiwanese primary pupils to talk and think critically to develop this approach further within the main study. However, some of the deficiencies noted from the classroom observations and from the teachers' interviews will need to be rectified. Also, a longer period of time may be required to establish a positive outcome.

### 5.7 Recommendations for the main study design and conduct

Overall, using dialogic teaching applying the *Analects* to develop children's thinking and talking appears to be feasible from the results of the pilot. However, some points needs to be amended and developed further:

- 1) Although the selected texts of the *Analects* appeared appropriate to participants' thinking abilities, the brief contents accompanied by a picture only were still of limited effectiveness in promoting children's interactive discussion. According to Lipman (1977) and Fisher (2005), philosophical stories can effectively be applied to develop children's thinking and encourage peer dialogue as a process to expand thinking. Therefore, stories related to selected sentences from the *Analects* will be used as additional tool in the main study intervention to motivate children's discussion.
- 2) The period of the small group discussion was not enough to promote change among Taiwanese children who were not used to interactive discussion with group peers. The main study will therefore allocate double the amount of time to group discussion and reduce the time for whole class dialogue. The number of lessons over which the

intervention runs will also be increased from four lessons to twelve, in order to provide a more intensive experience.

3) The teacher did not offer sufficient support to engage older children in group debate, nor to encourage younger children to move more certainly into exploratory talk. This will be adjusted in the further intervention because Taiwanese children are shy to express their thoughts to one another in group discussion.

4) There is a risk that the picture gained from focusing on a single group in each class led to limited and possibly unrepresentative samples of dialogue. In the main study, an audio-recording will be taken from three small groups' discussion in each experimental group in every lesson, to investigate the development of pupils' critical thinking and moral reasoning in more detail.

5) Regarding the coding scheme, 'contact' turns took place very frequently in the dialogue of all age groups, making it more difficult to assess differences between them. This was not an informative coding in the assessment of dialogic abilities, and it will therefore not be applied in the later study.

6) Finally, whilst the interview schedule worked well, there appeared to be a need for more in-depth probing in the main study, especially around the topics of knowledge and use of dialogic methods.

## Chapter 6: Overview of Main Study

### 6.1 Introduction

This chapter presents an overview of the main study in this research. This study was implemented for three months from the beginning of March 2010 to the middle of June 2010 in a public primary school in Tainan, Taiwan. The aim of the main study was a) to examine the comparative benefits of applying the *Analects* of Confucius and contemporary moral dilemmas as the focus of dialogic teaching intended to develop children's moral reasoning and critical thinking; b) to investigate the growth of children's discursive skills over time and across the primary school age range, via extended application of materials of both types; c) to consider the impact of teacher behaviour within dialogic lessons on this development; and d) to examine in more detail the constraints on the use of dialogic teaching in Taiwanese schools, and how its introduction might be better helped. The following sections outline the overall study design; the intervention sample; the materials for the intervention, the language test and post-test; the parents' survey sample and materials; the interview sample and materials.

### 6.2 Design of the study

The main study applied an extended comparative intervention across six classes of Taiwanese children, involving two types of experimental group. Two classes of each of the same age groups as the pilot study were engaged in dialogic teaching over a 12 week period, but using different materials, either the *Analects* or moral dilemma stories. Three further classes served as control groups, one at each age level, who followed the regular curriculum without the dialogic teaching intervention. Whilst recordings of dialogue were taken in the intervention classes, no comparable

recordings were made in the control classes. Whilst this may have carried the risk of not being able to compare dialogue between the intervention and control classes, as the teacher interviews in the pilot study made clear, pupil dialogue is rarely encouraged in typical Taiwanese lessons, and thus it seemed likely that trying to capture instances of it would have been largely wasted effort. Content and discourse analysis of group dialogue within the intervention classes was used to examine the effects of the different types of material on the characteristics of discussion. The study also used a number of subsidiary measures, including: the use of language tests to compare the abilities of children in each condition and assess parity between them; the use of a written essay task as a post-test; a parents' survey regarding conversation about morality within the home (implemented before the intervention); and interviews with teachers' (carried out at the end of the intervention).

### **6.3 Intervention Sample**

The primary school was an urban public school in the south central area of Tainan, Taiwan. The school contained 39 regular classes and 8 special education classes which covered around 1200 pupils. The school programme was based on the National Nine-Year integrated curriculum. Details of the research were distributed to six intervention classes and three control classes. Intact primary school classrooms (aged 7-8, 9-10, and 11-12 years) were assigned to the intervention conditions. Approximately 270 parents of pupils in these nine classes were approached for their agreement for their children to participate in the research (see Appendix VI for the consent form). 166 of these both had their parents' permission and expressed willingness themselves to participate in the study. A total of 117 of these children were assigned to the research interventions, and the other 49 students were allocated to the control condition. The classes were randomly assigned to each condition by the

researcher, who was given a list of classes in each age group, and simply went through this list assigning them to conditions in turn, before having any contact with them.

Development of critical thinking was examined in three intervention classes, one from each age group, that participated in dialogic teaching with the Analects; in a further three intervention classes, again, one from each age group, that engaged in dialogic teaching with children's moral dilemmas stories; and in three control classes. The pupil participants in the six intervention classes were taken to another classroom to implement the intervention lessons. Non-participating children stayed in their original classroom to do tasks set by their teachers during the period of the intervention. The participants in the control classes were taken to another classroom to carry out the post-test at the end of the research intervention only. Experimental and control classes were checked for match in terms of language grade level, as shown in Table 6.1. The scores on the language test will be discussed in Chapter 8.1.

**Table 6.1.** Participant characteristics.

Age group	Condition class	Number of pupils	Mean language grade
Class A (7-8 years)	Intervention A (The Analects)	25	97.76
Class A (7-8 years)	Intervention A-1 (Moral dilemma)	18	97.11
Class A (7-8 years)	Control A	23	95.57
Class B (9-10 years)	Intervention B (The Analects)	17	93.65
Class B (9-10 years)	Intervention B-1 (Moral dilemma)	26	97.15

Class B (9-10 years)	Control B	14	94.71
Class C (11-12 years)	Intervention C (The Analects)	17	88.59
Class C (11-12 years)	Intervention C-1 (Moral dilemma)	14	89.36
Class C (11-12 years)	Control C	12	91.67

#### 6.4 Materials for intervention

The materials for the two intervention programmes were adapted from two books with modifications driven by applicability to the specific aims of the present research and the different age groups involved. Both programmes were consistent with the relevant curriculum and with the time that would normally be devoted to single themes in lessons.

The *Analects of Confucius* programme lasted for 12 lessons, one lesson in a week, and 40 minutes in a lesson. One or two comprehensible sayings were selected from the *Analects* for each lesson based on different grade levels. An iconography and a story concerned with each saying formed part of the material presented to pupils. The moral dilemma programme used materials chosen from *Stories for Thinking* in lessons. The sample of selected sayings from the *Analects* and stories from *Stories for Thinking* which were used in the research is shown in Appendix X.

#### 6.5 Recording of group dialogues

Pupil participants were divided into three to five small groups in each class, with around four to five children in each. Three groups per class were selected as targets to

have their peer discussion audio recorded across the whole sequence of 12 lessons. Their willingness to be recorded was established before starting the intervention. In line with the second recommendation from the pilot, small group discussion was the only focus of recording and the time devoted to this was extended as lessons progressed. The whole class dialogue was not recorded.

### **6.6 Language test and post-test**

Participants in both intervention and control classes were administered a language test and a written essay post-test. The language test, which examines vocabulary, grammar, reading comprehension and reasoning, assessed pupils' achievement in their first language (Chinese) learning, relative to the norms for their age group. This test formed part of their midterm examination, and data were therefore not available until the fourth lesson of the intervention.

In the post-tests, all the pupils were required to write a reflective essay in response to a story that was similar to those that were provided as material for the small group discussions, though pupils had not discussed this specific moral dilemma or saying from the *Analects* previously. Half the children in each condition were assigned to write an essay on the moral dilemma topic, and the remaining half to an essay on the selected Analect.

The moral dilemma story concerned a poor man who hitched his horse to a tree and had lunch in a pub. Soon after, a rich man rode his horse to the same pub for lunch and hitched his horse to the same tree. The poor man gave him a warning, saying: "my horse has not been trained yet, he is out of control. So, he will probably kick your horse to death. Please do not hitch your horse by my horse." However, the rich man

ignored his warning. Eventually, the rich man's horse was kicked to death by the poor man's horse. Pupils were asked to write an essay reflecting on the dispute between the poor man and the rich man, and what they would have done if they had been the judge.

For the Analects exercise, the 7 to 8 year old children were required to write an essay to consider the meaning of • • • • •<sup>1</sup>(*Zi yue*: • • • • •

"*Zhong wu zhi, bi cha yan; zhong hao zhi, bi cha yan.*" ). The older pupils had to write an essay to ponder the connotation of • • • • •

• • • • •  
• • • • •<sup>2</sup>(*Zi Zhang wen ren yu* • • • • •

*Kong Zi. Kong Zi yue: " Neng xing wu zhe yu tian xiang, wei ren yi. " Qing weng zi.*

*Yue: "Gong, guan, xing, ming, hui. Gong zhe bu hui, guan zhe de zhong, xing zhe ren ren yan, ming zhe you gong, hui zhe zhu yi shi ren. ")*

### 6.7 Parents' Survey

The parents' survey was implemented to acquire parents' perception of how far ethical and 'philosophical' issues were discussed in the family of participating children, and whether or not moral dilemmas and Confucian ideas ever formed part of that discussion. The objective was to establish whether the supposed difference between the two in cultural resonance is actually borne out in parental conversation with children.

<sup>1</sup> Confucius said: "When a person is unpopular, it is necessary to find out why that is so. When a person is popular, it is also necessary to find out why." <sup>2</sup> Confucius said: "respectful, generous, good faith, nimble, and kind. The respect will not receive the insult. The generosity can obtain the populace. The good faith will attain other's assign. The nimbleness will make the work progress. The kindness is able to demand others.



There were 179 parents (mothers and fathers) of pupil participants who expressed willingness to participate in the survey. These included 166 parents of pupil participants, plus another 13 parents who were willing to complete the survey, but who did not allow their children to engage in the research. Questionnaire forms were taken home by the participating children, and parents had a day to read them before completing the survey. If they were willing to respond, they signed an informed consent page and filled out their answers. The opening section of the questionnaire requested information on the respondent's position within the family (father, mother or other), their age, the highest level of education that they had completed, their occupation, how many children there were in the family, and the age and gender of each of these. A second section presented first an outline of a moral dilemma encapsulated within a specific scenario, and then a Confucian analect. For the moral dilemma, respondents were asked an open-ended question about their judgment of the situation, and about what they would say to their children concerning it. They were then asked if they ever had discussions with their children about situations of this kind, and if so, with what frequency (presented as a choice between five categories from never to very often). Questions following the Analect took the same form, except that the first question asked the respondent for their interpretation of its meaning (see Appendix V for the exact details of the questions).

### **6.8 Teachers' interview**

The teacher interviews were conducted to obtain perspectives on dialogic teaching employing the two intervention approaches to develop Taiwanese children's critical thinking. As in the pilot, the aim of the interviews was to address the research questions, and evaluate the teachers' viewpoints of whether dialogic teaching could be modified in Taiwanese primary schools to employ either the traditional *Analects of*

*Confucius* or Western philosophical moral dilemma children stories to effectively cultivate Taiwanese children's ability to think critically. A total of eight teachers in the primary school participated in the interview. The interview schedule is shown in Appendix VII.

The following chapters present in turn the results of analyses from the parents' survey; the intervention dialogues and post-tests; and the teachers' interviews.

## **Chapter 7: Survey of Parents**

### **7.1 Introduction**

As noted previously, the survey of parents was carried out in order to establish whether the pupil participants in the main study had experienced conversations relevant to moral dilemmas or Confucian ideas with their parents at home. This chapter describes the methods used to analyse parents' responses, and the outcome of these analyses in terms of both overall patterns and variations in responses associated with the background characteristics of families.

### **7.2 Scoring of the survey questions**

Responses to four of the questions in the opening section (respondent's position within the family age, highest level of education, number of children in the family) were scored simply in terms of the fixed category of response that had been chosen. To make them simpler to use in subsequent analyses, responses to the question on the age and gender of each child in the family were scored solely in terms of the age of the eldest child. Responses to the question on occupation were diverse, and since occupational status essentially followed educational level, it was decided to use the latter information only. Answers to the fixed response questions in the second section concerning the occurrence and frequency of discussion with children of moral scenarios and Chinese proverbs were also scored simply in terms of the selected response category. However, the open-ended questions about respondents' judgment of the presented scenario and interpretation of the selected Analect, and about what they would say to their children concerning these, required the construction of a coding scheme to capture response patterns. This took the following form:

*Moral dilemma*

*Q1 – respondents' judgment of the presented scenario*

- (1) Explanation – responses which enlarged on the issues raised by the scenario
- (2) Resolution – answers analysing what the character in the scenario should do or be guided to do
- (3) Strategy – description of a way of acting either by the character's parents or by the character themselves to avoid the dilemma in the first place
- (4) Proverb connection – enunciation of a Chinese proverb applicable to the dilemma to show how it should be interpreted
- (5) Uncodable - answer either missing or uninterpretable

*Q2 – respondents' statement about what they would say to their children concerning the scenario*

- (1) Explanation – efforts to explain and enlarge on the issues raised by the scenario
- (2) Proverb connection – enunciation of a Chinese proverb applicable to the dilemma to show how it should be interpreted
- (3) Extension – exploration of related ideas or thoughts
- (4) Strategy – description of a way of acting either by the character's parents or by the character themselves to avoid the dilemma in the first place
- (5) Uncodable - answer either missing or uninterpretable

*Analect*

*Q1 – respondents' interpretation of the presented analect*

- (1) Accuracy – correct interpretation according to accepted wisdom
- (2) Inaccuracy – incorrect interpretation
- (3) Uncodable - answer either missing or uninterpretable

*Q2 – respondents' statement about what they would say to their children concerning the analect*

- (1) Paraphrasing – alternative rendering of the analect
- (2) Strategy – description of a way of acting to avoid the issue framed by the analect
- (3) Paraphrasing + other elements – alternative rendering of the analect with additional elements
- (4) Reiteration – repeating the analect
- (5) Extension – exploration of related ideas or thoughts
- (6) Proverb connection – enunciation of another Chinese proverb applicable to the analect to show how it should be interpreted
- (7) Uncodable - answer either missing or uninterpretable

The reliability of this coding system was assessed using two coders trained in the use of the categories, who completed independent coding of 10% of responses to the open-ended questions. The same two coders also coded 10% of the audio recordings of the dialogue in each intervention class, and 10% of children's post-test essays. Inter-coder agreement over the different categories employed in the coding schemes ranged from 80.53% to 88.89% (M=86.02%).

### 7.3 Responses to the fixed questions

Table 7.1 shows the number of respondents in each category for the fixed questions in the first section of the survey, except for those categories which were chosen very infrequently, along with a breakdown by these categories of the number of respondents who reported discussing moral dilemmas and Chinese proverbs with their children.

**Table 7.1.** Number of respondents in each sub-category for the demographic questions, plus breakdown by sub-category of the number of respondents reporting discussion of moral dilemmas and Chinese proverbs with their children.

Family variables		Reported discussion using	
		Moral dilemma	Chinese proverbs
Role of respondent in family:	Father (N=47)	33	27
	Mother (N=127)	103	82
Total		136	109
Age of respondent:	31 to 40 (N=88)	75	60
	41 to 50 (N=80)	59	48
Total		134	108
Highest level of education of respondent:	Junior high school (N=21)	14	8
	High school (N=88)	68	55
	Bachelor (N=63)	55	47
Total		137	110
Number of children in family:	1 child (N=33)	21	15
	2 children (N=93)	77	64
	3 children (N=47)	37	31
Total		135	110
Age of the oldest child:	7 to 8 (N=24)	22	21
	9 to 10 (N=48)	28	22
	11 to 12 (N=60)	52	38
	Up to 12 (N=46)	37	31
Total		139	112
Discussion with children at home (N=174)		158	118

As can be seen, most respondents were mothers, and the majority of parents were between 31 and 50 in age. In general, discussion about moral dilemmas was reported as being more common than that relating to Chinese proverbs. However, the latter was more likely to take place where parents were better educated, and in families with more than two children or older children.

#### **7.4 Responses to the open questions**

Tables 7.2a and 7.2b below show the relationship between the various family variables and responses to Question 1 for the moral dilemma scenario. Tables 7.3a and 7.3b show the same relationships for responses to Question 1 for the analect/Chinese proverbs. The relationship between responses to Question 1 and 2 for the moral dilemma and for the analect/proverbs is shown in Tables 7.4 and 7.5 respectively.

With regard to the family variables, a significant association was found between the role of respondents and their category of response to Question 1 for the moral dilemma (chi-square = 15.32, df = 4,  $p = .004$ ), but there was no corresponding relationship for the analect. There was no significant association between the age of guardians and their replies to Question 1 for either the moral dilemma or the analect. Highest level of education was only associated with responses regarding the analect (chi-square = 22.52, df = 4,  $p < .001$ ). Number of children in the family was only associated with moral dilemma responses (chi-square = 23.32, df = 8,  $p = .003$ ). Significant associations were found between responses to both moral dilemma and analect Question 1 for age of the oldest child (chi-square = 23.88, df = 12,  $p = .021$  and chi-square = 15.78, df = 6,  $p = .015$  respectively). There were also significant associations between frequency of family discussion and responses to both moral dilemma and analect Question 1 (chi-square = 24.08, df = 12,  $p = .02$  and chi-square =

16.13,  $df = 4$ ,  $p = .003$  respectively), and likewise for whether or not discussion was reported to take place within the home (chi-square = 13.72,  $df = 2$ ,  $p = .001$  and chi-square = 12.81,  $df = 4$ ,  $p = .012$  respectively). Finally, and perhaps unsurprisingly, there were massively significant relationships between responses to Question 1 and Question 2 for both the moral dilemma and the analect (chi-square = 187.96,  $df = 16$ ,  $p < .001$  and chi-square = 63.43,  $df = 8$ ,  $p < .001$  respectively).

Looking at the detail for moral dilemma Question 1 in Tables 7.2a and 7.2b, it can be seen that fathers were more likely than mothers to use explanations in their responses. Mothers were more likely than fathers to use resolution or to offer strategies. In terms of the effect of number of children in the family, the use of explanation increased with the family size of the respondent. Parents who had two children produced the highest amount of resolution, but this dropped substantially among parents who had three children. Parents who had one child also produced resolution frequently, but a large proportion of their responses were uncodable. Explanations also increased with the age of the eldest child in families, except those where the oldest child was 9 to 10 years, where there were a high percentage of uncodable answers. Resolutions were more common among respondents whose oldest child was younger. Proverb connection was also relatively more common amongst respondents with the youngest families.

As can be seen in Table 7.2b, both explanation and resolution tended to be used more by parents who reported more frequent conversation with children about moral dilemmas. The use of strategy was a relatively consistent alternative to these regardless of the frequency of conversations. Unsurprisingly, parents who did not have any conversation about moral dilemma with their children produced a large



amount of uncodable responses.

Turning to the analect responses, Table 7.3a shows that mothers offered correct answers more than fathers, though in general the level of accuracy was not high, and there were relatively large numbers of uncodable answers. Parents with a higher education degree produced the best rate of accuracy, whereas parents who had not progressed beyond junior high school produced a very high proportion of uncodable answers. Parents in families with younger children also had a higher rate of accuracy, interestingly. In relation to frequency of discussion of Chinese proverbs in the home (see Table 7.3b), parents who reported talking about them with their children answered more accurately. Those who said that they had never talked to children about Chinese proverbs offered a large percentage of unclear descriptions.

**Table 7.2a.** Frequency of categories of response to moral dilemma Question 1, broken down by respondent/family characteristics.

Categories	Role of respondent in family (N=174)		Number of children (n=173)			Age of the oldest child (N=178)			
	Father N=47	Mother N=127	1 child N=33	2 children N=93	3 children N=47	7 to 8 N=24	9 to 10 N=48	11 to 12 N=60	12 up N=46
Strategy	3 6.4%	26 20.5%	5 15.2%	13 14.0%	10 21.3%	4 16.7%	7 14.6%	10 16.7%	8 11.4%
Proverb connection	5 10.6%	2 1.6%	2 6.1%	2 2.2%	2 4.3%	3 12.5%	0 .0%	2 3.3%	2 4.3%
Resoulution	8 17.0%	37 29.1%	9 27.3%	34 36.6%	3 6.4%	8 33.3%	12 25%	18 30%	10 21.7%
Explanation	17 36.2%	38 29.9%	5 15.2%	28 30.1%	22 46.8%	7 29.2%	9 18.8%	22 36.7%	17 37%
Uncodable	14 27.8%	24 18.9%	12 36.4%	16 17.2%	10 21.3%	2 8.3%	20 41.7%	8 13.3%	9 19.6%

**Table 7.2b.** Frequency of categories of response to moral dilemma Question 1, broken down by reported frequency of discussion in the home.

Categories	Frequency of discussion (N=174)				Discussing with children at home (N=174)	
	Never N=20	Occasionally N=71	Sometimes N=70	Very often N=17	No N=20	Yes N=154
<b>Strategy</b>	3 15%	13 18.3%	10 14.3%	4 23.5%	1 5%	26 16.9%
<b>Proverb connection</b>	0 .0%	2 2.8%	5 7.1%	0 .0%	0 .0%	7 4.5%
<b>Resolution</b>	4 20%	21 29.6%	17 24.3%	6 35.3%	4 20%	44 28.6%
<b>Explanation</b>	2 10%	21 29.6%	25 35.9%	7 41.2%	4 20%	50 32.5%
<b>Uncodable</b>	11 55%	14 19.7%	13 18.6%	0 .0%	11 55%	27 17.5%

**Table 7.3a.** Frequency of categories of response to analect Question 1, broken down by respondent/family characteristics.

Categories	Role of guardians in family (N=174)		Highest level education (n=172)			Age of the oldest child (N=178)					
	Father N=47	Mother N=127	Junior high school N=21	High school N=88	Bachelor N=63	7 to 8 N=24	9 to 10 N=48	11 to 12 N=60	12 up N=46		
Accuracy	10	49	7	20	32	14	13	18	15		
	21.3%	38.6%	33.3%	22.7%	50.8%	58.3%	27.1%	30%	32.6%		
Inaccuracy	17	33	1	35	15	7	9	20	16		
	36.2%	26.0%	4.8%	39.8%	23.8%	29.2%	18.8%	33.3%	34.8%		
Uncodable	20	45	13	33	16	3	26	22	15		
	42.6%	35.4%	61.9%	37.5%	25.4%	12.5%	54.2%	36.7%	32.6%		

**Table 7.3b.** Frequency of categories of response to analect Question 1, broken down by reported frequency of discussion in the home.

Categories	Frequency of discussion (n=174)			Discussing with children at home (N=174)	
	Never N=69	Occasionally N=71	Sometimes N=34	No N=70	Yes N=104
Accuracy	16	32	13	16	45
	23.2%	45.1%	38.2%	22.9%	43.3%
Inaccuracy	15	22	11	16	32
	21.7%	31%	32.4%	22.9%	30.8%
Uncodable	38	17	10	38	27
	55.1%	23.9%	29.4%	54.3%	26.0%

**Table 7.4.** Cross-tabulation of responses to moral dilemma Questions 1 and 2.

Moral dilemma Q1 (N=179)	Moral dilemma Q2				
	Proverb				
	Explanation	connection	Extension	Strategy	Uncodable
Strategy (N=30)	7	2	3	16	2
	23.3%	6.7%	10.0%	53.3%	6.7%
Proverb connection (N=7)	2	1	0	4	0
	28.6%	14.3%	.0%	57.1%	.0%
Resolution (N=48)	20	1	4	21	2
	41.7%	2.1%	8.3%	43.8%	4.2%
Explanation (N=55)	32	1	13	8	1
	58.2%	1.8%	23.6%	14.5%	1.8%
Uncodable (N=39)	0	0	0	0	39
	.0%	.0%	.0%	.0%	100.0%

Table 7.4 shows the relationship between replies to moral dilemma Questions 1 and 2. It can be seen that parents who used explanation to reply to Question 1 tended most often to say that they would use the same approach or else extensions of these when discussing the dilemma with their children. Parents who applied resolutions in response to Question 1 also commonly spoke of using explanations with their children, but articulation of a strategy was slightly more frequent. The majority of parents who gave strategies in answer to Question 1 referred to use of strategy in speaking to their children. Proverb connection was an uncommon response to both Question 1 and Question 2. Parents who gave uncodable responses to Question 1 uniformly gave unclear responses to Question 2 as well. Whilst there was some variation, therefore, in general parents consistently tended to use the same approach both to their own interpretation of the moral scenario and to identifying how they would discuss it with their children.

**Table 7.5.** Cross-tabulation of responses to analect Questions 1 and 2.

Analect Q1 (N=179)	Analect Q2 (N=179)						
	Paraphrasing plus other				Proverb connection		
	Paraphrasing	Strategy	elements	Reiteration	Extension	Uncodable	
<b>Accuracy (N=61)</b>	6	12	12	5	12	9	5
	9.8%	19.7%	19.7%	8.2%	19.7%	14.8%	8.2%
<b>Inaccuracy (N=52)</b>	7	9	9	5	8	2	12
	13.5%	17.3%	17.3%	9.6%	15.4%	3.8%	23.1%
<b>Uncodable (N=66)</b>	0	0	0	0	0	0	66
	.0%	.0%	.0%	.0%	.0%	.0%	100.0%

Table 7.5 presents the relationship between responses to Questions 1 and 2 with regard to the analect. It can be seen that the significant association between the two is largely attributable to the fact that parents who gave uncodable responses to Question 1 did the same for Question 2. Parents who gave inaccurate accounts of the analect also frequently gave uncodable responses to Question 2, but otherwise answers to the latter were more or less evenly distributed across the various categories, regardless of the response to Question 1. The only exception to this was that parents who gave accurate interpretations of the analect were somewhat more likely to use other Chinese proverbs in their reports of how they would describe the analect to their children. In general, though, strategy, paraphrasing plus other elements, and extension were reported more than forms of response.

### **7.5 Discussion and conclusion**

It can be concluded that the parents of children in the participating sample were more likely to talk about forms of moral scenario within the home than they were to discuss Chinese proverbs, and that the majority were more comfortable with doing so. Projected family conversations about moral dilemmas predominantly made use of explanation and extensions of these, or else of strategies for avoiding the dilemma, largely according to parents own approach to interpreting them. Whilst there were uncodable responses which indicated unfamiliarity with this kind of material, they were considerably less frequent than they were for the analect/Chinese proverbs, and tended to be concentrated amongst those who were less educated and who were less experienced parents. In contrast, fewer than half of the parents could offer a correct interpretation of the analect, and many had little idea how to communicate the meaning of proverbial material of this kind to their children. There did appear to be a small core who were more likely to understand this form of statement and to use it in

communication with their children, but this was concentrated among the more educated parents.

As far as the present evidence is concerned then, there is in fact little support for the notion that traditional Confucian writings have greater cultural resonance than more contemporary Western modes of expressing moral issues – at least as far as communication with children is concerned. Understanding of the former appears to be confined to a possibly diminishing rump of better educated adults, with relatively little effort being to pass this on.



## Chapter 8: The Dialogic Intervention Study

The objective of this chapter is to present the outcomes of the dialogic intervention study, including the cross-condition language test comparison, the effects of the two dialogic teaching programmes on children's talk, and the post-test results. The principal focus will be on changes in children's moral reasoning and critical thinking during the research intervention, and evidence for any cumulative effects of these on the content of the post-test essays.

### 8.1 The results of the language-test

In order to judge whether the children in the two intervention conditions and the control condition within each age group had comparable ability in their first language (Mandarin), their school language learning results (presented earlier in Table 6.1) were analysed using one-way ANOVAs. The mean standardised language grades indicated that in general the participating children were performing at a level slightly below the national average, especially in the oldest age group. Differences between classes within each age group were small, but did in fact turn out to be significant for the youngest and middle age groups ( $F(2,60)=4.18, p<0.05, \eta^2 = 0.12$ ; and  $F(2, 51)=4.92, p<0.05, \eta^2 = 0.16$  respectively). In the youngest age group, the two intervention classes had comparable language levels (mean = 97.76 for the Analects intervention class, and 97.11 for the Moral dilemma class). The control class had a lower score, however (mean = 95.57). In the middle age group, the Moral dilemma intervention class (mean = 97.15) had a higher score than either the Analects intervention class (mean = 93.65) or the control class (mean = 94.71).

Though these variations are not big ones, they nevertheless need to be kept in mind in what follows. It should be noted that the variable nature of the pattern of differences, coupled with the fact that there were no differences between classes in the oldest age group, suggests that it is unlikely that the observed variation was a function of the interventions themselves, even though the language tests were conducted after they had begun.

## **8.2 The outcome of dialogic teaching programme**

Samples of the small group dialogues are shown in Appendix X. The coding scheme outlined in Chapter 4.2.4.2 was applied to the conversations recorded in each of the 12 intervention lessons using the *Analects* (Intervention A, B, and C) and the moral dilemmas (Intervention A-1, B-1, and C-1), where Intervention A and A-1 were 7-8 year-old children, Intervention B and B-1 were aged 9-10 pupils, Intervention C and C-1 were 11-12 year-old students. Two modifications were made to the use of the scheme following the pilot study, however: the 'contact' and 'uncodable' categories were dropped (cf. the earlier discussion); and the teacher's input was simply coded in terms of frequency of occurrence rather than being broken down into separate codes, in view of the narrow range of characteristics that it was found to exhibit in the pilot study. Once the pupil dialogues had been coded, the total number of codes of each type was counted for each lesson, with separate totals being kept for each of the three groups who had been recorded. These totals provided the raw data for analysis.

Three-way mixed ANOVAs were conducted on the observed frequencies for each of the nine coding categories, with time (i.e., lesson number) as a within-subjects factor, and class age and intervention lesson type as between-subjects factors. For analyses involving the within-subjects factor, Greenhouse-Geisser corrections were made

where Mauchly's test of sphericity was found to be significant. Tables 8.1 and 8.2 show the means associated with each of the main effects, Table 8.3 summarises the results, and Figures 8.1 to 8.19 display line graphs relating to significant interaction effects in order to illustrate the source of these (the details of the mean frequency per lesson of each dialogue code are shown in Appendix XI).

Six of the nine analyses revealed highly significant effects of time, with effect sizes (partial  $\eta^2$ ) as follows: 'disagreement', .37; 'agreement', .48; 'explanation', .17; 'elaboration', .34; 'question', .35; 'teacher's involvement', .27. Disagreements, agreements, elaborations and questions all increased fairly steadily in frequency as lessons progressed, whereas explanations exhibited a rather less clear pattern of fluctuation (see Table 8.1). Teacher involvement decreased with time, indicating that initial support was withdrawn as pupil dialogue increased. Propositions showed no effect of time, remaining at a stable high frequency throughout. The increase in pupil dialogue was therefore accounted for predominantly by the growth in more differentiated forms of exchange, consistent with an improvement in thinking and argumentation. This point is an important one, given that the time devoted to group discussion was gradually increased: if the increases in dialogue were simply a reflection of this, propositions would also have grown in number.

Both class age and lesson type showed systematic contributions to the variance in the observed frequencies of the dialogue categories as shown in Tables 8.2. Effects of class age were found for all codes except, interestingly, explanations. Propositions and disagreements were more frequent for the oldest age group than for the youngest and middle, whilst agreements and questions were higher for both the oldest and the

middle than for the youngest age group. Elaborations, references back and questions all showed a steady increase in frequency with age. Teacher involvement was higher

**Table 8.1** Means for each element of dialogue broken down by time point (standard deviations in brackets)

Time	Dialogic skills							Teacher involvement
	Proposition	Disagreement	Agreement	Explanation	Elaboration	Reference back	Resolution	Question
<b>Time 1</b>	13.17 (6.32)	1.39 (1.24)	5.61 (2.55)	1.50 (1.79)	1.17 (0.71)	6.94 (2.41)	6.17 (3.07)	4.72 (3.14)
<b>Time 2</b>	10.44 (3.31)	0.72 (0.96)	4.56 (2.48)	1.00 (1.50)	1.50 (1.25)	6.94 (3.23)	5.72 (3.10)	4.61 (2.64)
<b>Time 3</b>	12.61 (4.34)	1.61 (1.69)	4.67 (2.57)	1.17 (1.58)	1.89 (6.83)	6.83 (3.68)	5.72 (2.49)	4.61 (2.15)
<b>Time 4</b>	10.83 (3.55)	2.22 (1.52)	6.67 (2.47)	1.28 (1.60)	2.17 (0.79)	8.28 (3.20)	5.56 (2.71)	4.00 (2.06)
<b>Time 5</b>	11.67 (3.84)	2.33 (1.24)	5.56 (2.55)	0.83 (1.47)	1.50 (1.38)	8.39 (4.18)	6.50 (1.92)	5.22 (2.02)
<b>Time 6</b>	13.00 (5.46)	2.56 (1.65)	6.56 (2.57)	1.72 (2.00)	2.22 (1.17)	7.83 (4.99)	7.61 (2.62)	6.33 (3.90)
<b>Time 7</b>	11.89 (5.27)	2.39 (1.50)	7.50 (2.90)	1.50 (1.38)	2.67 (2.11)	6.56 (3.90)	6.89 (3.89)	6.56 (3.22)
<b>Time 8</b>	10.61 (4.87)	3.11 (2.22)	7.17 (2.36)	2.17 (1.58)	2.06 (1.35)	7.78 (4.74)	6.94 (2.98)	6.67 (3.74)
<b>Time 9</b>	11.17 (4.41)	2.94 (2.26)	7.94 (1.93)	1.61 (1.24)	2.39 (1.79)	6.61 (4.16)	6.17 (1.79)	7.28 (2.72)
<b>Time 10</b>	12.00 (3.33)	2.56 (1.46)	8.17 (2.28)	0.83 (1.10)	2.22 (1.35)	8.22 (3.75)	6.72 (2.65)	6.22 (2.26)
<b>Time 11</b>	11.06 (4.12)	3.50 (1.47)	9.00 (2.30)	2.22 (1.70)	3.22 (1.52)	7.22 (3.42)	6.56 (2.90)	7.33 (3.13)
<b>Time 12</b>	11.33 (4.09)	3.39 (1.46)	9.33 (2.79)	1.61 (1.15)	3.28 (1.64)	7.89 (3.34)	7.61 (2.30)	7.94 (4.37)

**Table 8.2** Mean for each element of dialogue broken down by age group and lesson type (standard deviations in brackets)

Age group	Dialogic skills								Teacher involvement
	Proposition	Disagreement	Agreement	Explanation	Elaboration	Reference back	Resolution	Question	
<b>Class A</b>	10.32 (0.67)	2.11 (0.27)	5.78 (0.34)	1.10 (0.22)	1.60 (0.24)	4.63 (0.48)	4.93 (0.33)	3.78 (0.25)	8.33 (0.51)
<b>Class B</b>	10.65 (0.67)	1.85 (0.27)	7.50 (0.34)	1.52 (0.22)	2.14 (0.24)	8.31 (0.48)	7.76 (0.33)	6.36 (0.25)	8.61 (0.51)
<b>Class C</b>	13.96 (0.67)	3.22 (0.27)	7.65 (0.34)	1.75 (0.22)	2.83 (0.24)	9.44 (0.48)	6.85 (0.33)	7.74 (0.25)	6.54 (0.51)
<b>Lesson type</b>									
<b>The Analects</b>	12.82 (0.54)	2.62 (0.22)	7.00 (0.28)	1.06 (0.18)	2.35 (0.19)	8.44 (0.39)	7.00 (0.27)	6.51 (0.20)	7.89 (0.41)
<b>Moral dilemma</b>	10.47(0.54)	2.17 (0.22)	6.96 (0.28)	1.85 (0.18)	2.03(0.19)	6.48(0.39)	6.02 (0.27)	5.41 (0.20)	7.76 (0.41)

for the youngest and middle age groups than for the oldest. Explanations did in fact increase slightly with age, but not sufficiently to show a significant effect. There were significant effects of lesson type for five of the codes. Explanations were more frequent in the moral dilemma lessons, whilst propositions, references back, resolutions and questions were more common in the Analects lessons.

As Table 8.3 shows, these basic patterns were qualified by a number of interaction effects. Taking those involving lesson type, first of all, there were significant two-way interactions between time and lesson type for disagreements, agreements, explanations and questions. For disagreements, this was attributable to the fact that these showed a more consistent increase over time in the Analects lessons, whereas there was a sharp increase only in the final two lessons for the moral dilemma intervention (see Figure 8.1). For agreements too, the increase over time was more consistent for the Analects lessons, whereas the pattern in the moral dilemma lessons showed greater fluctuation (see Figure 8.2). A similar pattern was evident for explanations, except that the fluctuation in the moral dilemma lessons was around a higher level that was more stable over time (see Figure 8.3), helping explain why the moral dilemma sessions gave rise to more of these. Finally, for questions, the pattern of greater fluctuation in the trend towards an increase over lessons switched to the Analects intervention; the increase was somewhat steadier for the moral dilemma lessons, although at a lower level (see Figure 8.4).

There was also a three-way interaction between time, class age and lesson type for questions, as there was for references back. For questions, this appeared to be attributable to the fact that the more general pattern in the Analects lessons only held for the oldest and middle age group; the youngest showed little growth in the

incidence of these. In contrast, the basic trend held for all three agree groups in the moral dilemma lessons (see Figures 8.5 and 8.6). For references back, the overall pattern of stability across lessons with greater incidence in the Analects intervention masked considerable variation according to age group and lesson type, especially for the middle group, who were in fact more likely to produce this form of dialogue in the moral dilemma lessons (see Figures 8.7 and 8.8).

Completing the picture for variation according to lesson type, there were two-way interactions between class age and lesson type for five codes. Agreements were higher in the moral dilemma lessons for the youngest age group, but tended to be higher in the Analects lessons for the older two age groups (see Figure 8.9). For explanations, the greater benefit of the moral dilemma lessons was in fact only evident for the youngest age group; for the older groups, lesson type made little difference (see Figure 8.10). For references back, the advantage of the Analects lessons was reversed for the middle age group (see Figure 8.11), whereas for questions, it was reversed for the youngest age group (see Figure 8.12). Teacher involvement tended to be higher in general in the Analects lessons, especially for the youngest age group, but the opposite pattern was observed for the middle age group (see Figure 8.13).

Though of less interest than the lesson type effects, there were also two-way interactions between time and class age for six of the nine codes. For propositions, the overall pattern of apparent stability concealed a tendency for these to gradually decline in frequency in the two younger age groups, but to increase in the oldest (see Figure 8.14). For agreements, the interaction was attributable to differences between the age groups in the trajectory of increase, this being steeper for the youngest and oldest ages (see Figure 8.15). For explanations and elaborations, the interactions

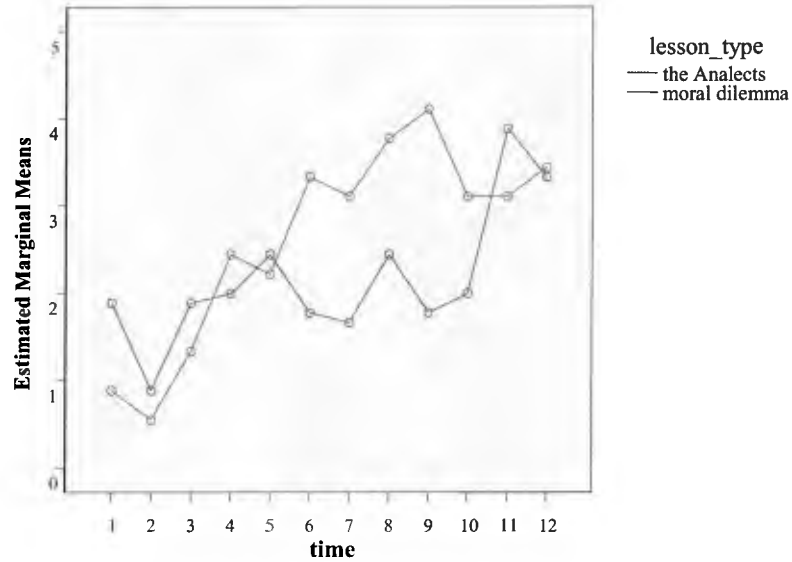


reflect the fact that the general upward trend was erratic, and highly so for the former (see Figures 8.16 and 8.17). For questions, the pattern was similar to that for agreements, except that the steeper increase was restricted to the oldest age group (see Figure 8.18). Finally, for teacher involvement, the decline over time was shallow for the youngest age group, steep for the oldest, and if anything reversed for the middle group (see Figure 8.19).

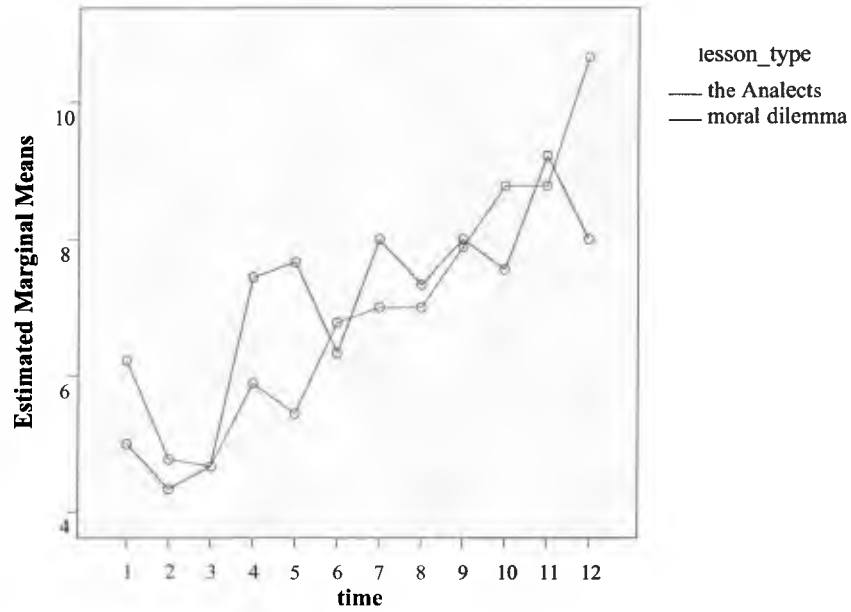
Table 8.3. Summary of ANOVA results for the dialogue codes.

	Within-Subjects effects				Between-Subjects effects			
	Time	Time * class age	Time *lesson type	Time*class	Class age	Lesson type	Class age*lesson type	
	F value (df= 11, 132) Partial eta sq	F value (df= 22, 132) Partial eta sq	F value (df= 11, 132) Partial eta sq	age*lesson type F value (df= 22, 132) Partial eta sq	F value (df= 1, 12) Partial eta sq	F value (df= 2, 12) Partial eta sq	F value (df= 2, 12) Partial eta sq	
Dialogic skills								
Proposition	ns	1.753, p<0.05 $\eta^2 = 0.23$	ns	ns	9.241, p<0.05 $\eta^2 = 0.61$	9.399, p<0.05 $\eta^2 = 0.44$	ns	
Disagreement	7.006, p<0.05 $\eta^2 = 0.48$	ns	1.999, p<0.05 $\eta^2 = 0.15$	ns	7.347, p<0.05 $\eta^2 = 0.55$	ns	ns	
Agreement	10.773, p<0.05 $\eta^2 = 0.47$	1.732, p<0.05 $\eta^2 = 0.22$	1.999, p<0.05 $\eta^2 = 0.41$	ns	9.602, p<0.05 $\eta^2 = 0.62$	ns	7.570, p<0.05 $\eta^2 = 0.56$	
Explanation	2.575, p<0.05 $\eta^2 = 0.18$	2.261, p<0.05 $\eta^2 = 0.27$	2.946, p<0.05 $\eta^2 = 0.20$	ns	ns	9.968, p<0.05 $\eta^2 = 0.45$	4.538, p<0.05 $\eta^2 = 0.43$	
Elaboration	6.190, p<0.05 $\eta^2 = 0.34$	2.63, p<0.05 $\eta^2 = 0.31$	ns	ns	7.025, p<0.05 $\eta^2 = 0.54$	ns	ns	
Reference back	ns	ns	ns	1.919, p<0.05 $\eta^2 = 0.24$	27.572, p<0.05 $\eta^2 = 0.82$	12.440, p<0.05 $\eta^2 = 0.51$	4.971, p<0.05 $\eta^2 = 0.45$	
Resolution	ns	ns	ns	ns	19.630, p<0.05 $\eta^2 = 0.77$	6.914, p<0.05 $\eta^2 = 0.37$	ns	
Question	6.548, p<0.05 $\eta^2 = 0.35$	1.961, p<0.05 $\eta^2 = 0.25$	2.122, p<0.05 $\eta^2 = 0.15$	1.848, p<0.05 $\eta^2 = 0.24$	67.539, p<0.05 $\eta^2 = 0.92$	15.227, p<0.05 $\eta^2 = 0.56$	11.175, p<0.05 $\eta^2 = 0.65$	
Teacher involvement	4.372, p<0.05 $\eta^2 = 0.27$	4.094, p<0.05 $\eta^2 = 0.41$	ns	ns	4.930, p<0.05 $\eta^2 = 0.45$	ns	4.279, p<0.05 $\eta^2 = 0.42$	

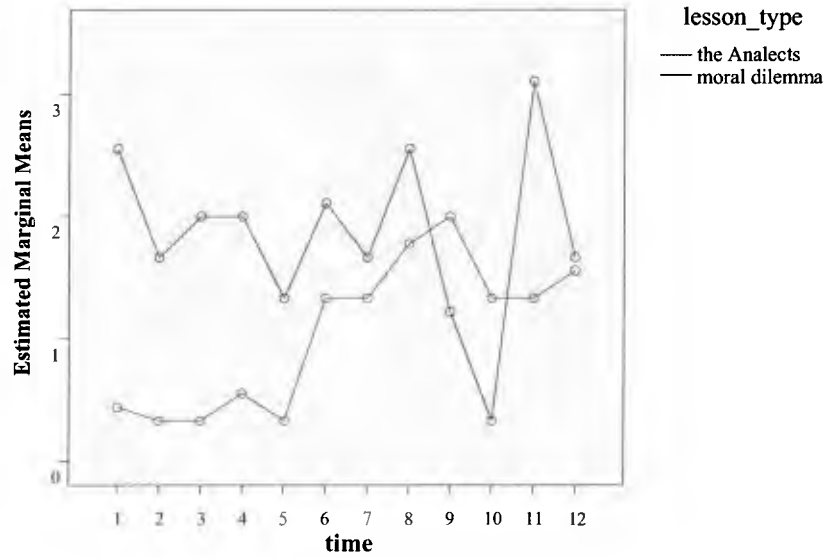
**Figure 8.1.** Time x lesson type trends for disagreements.



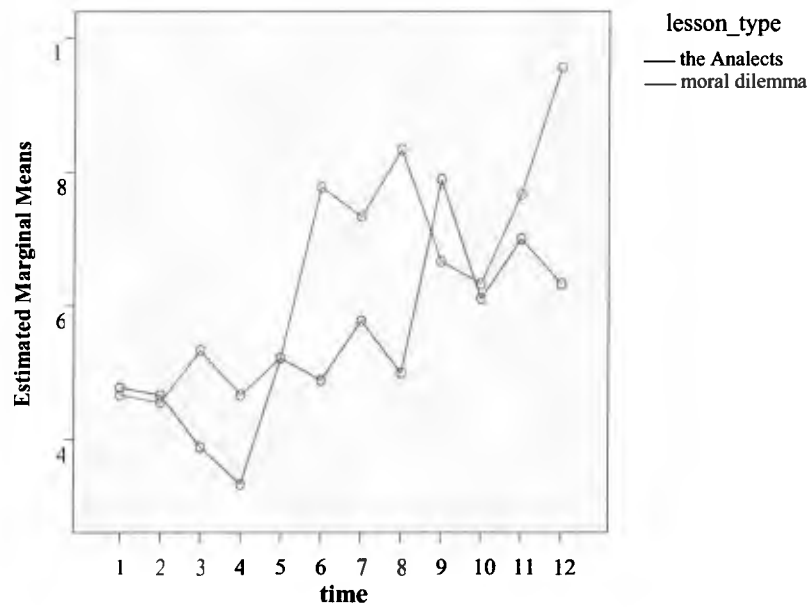
**Figure 8.2.** Time x lesson type trends for agreements.



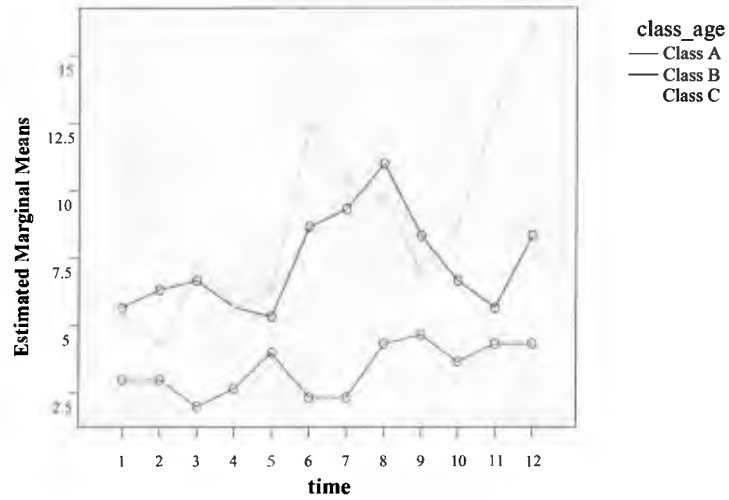
**Figure 8.3.** Time x lesson type trends for explanations.



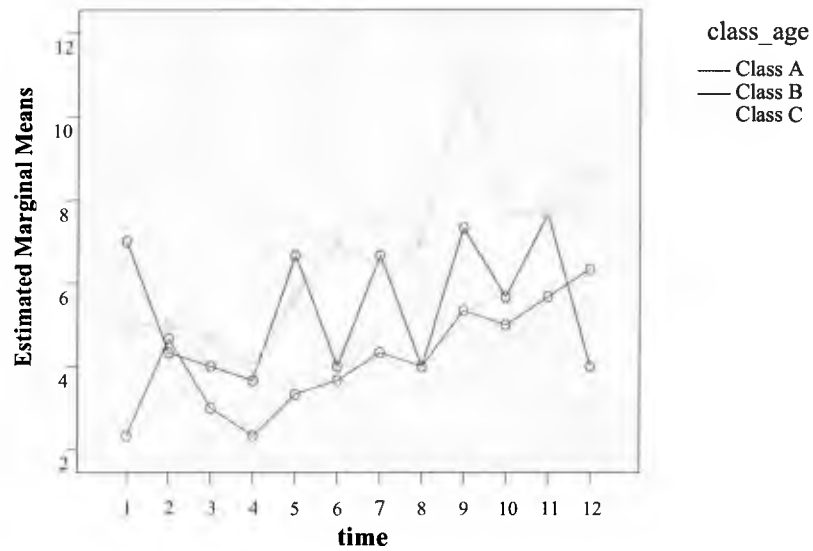
**Figure 8.4.** Time x lesson type trends for questions.



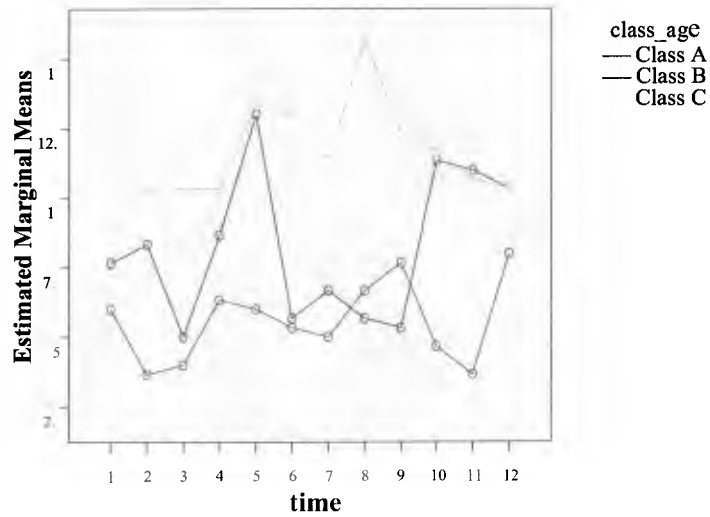
**Figure 8.5.** Time x class age trends for questions.  
(at lesson\_type = the Analects)



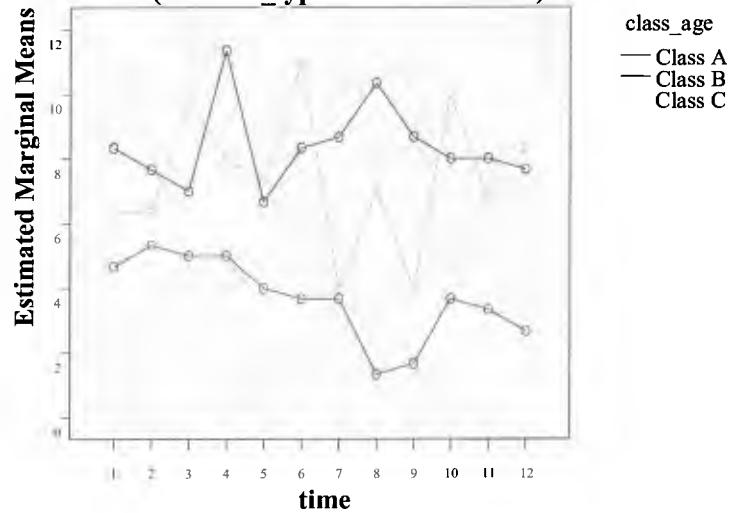
**Figure 8.6.** Time x class age trends for questions.  
(at lesson\_type = moral dilemma)

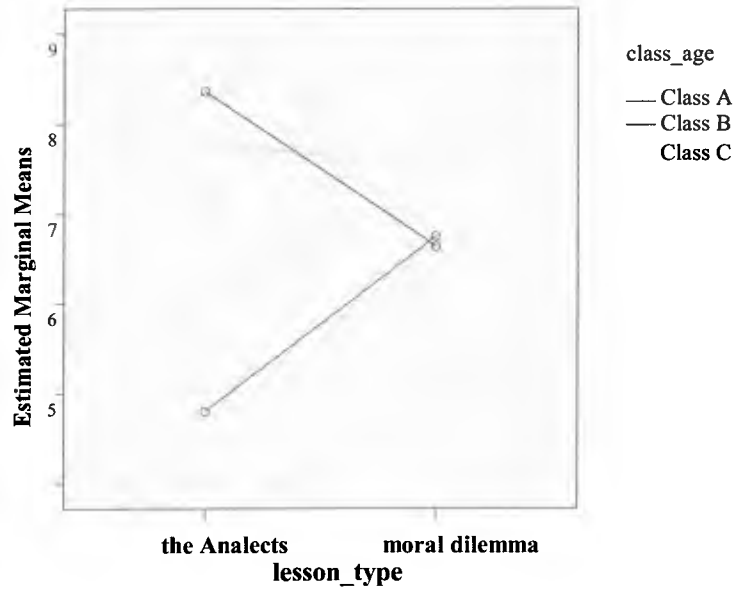
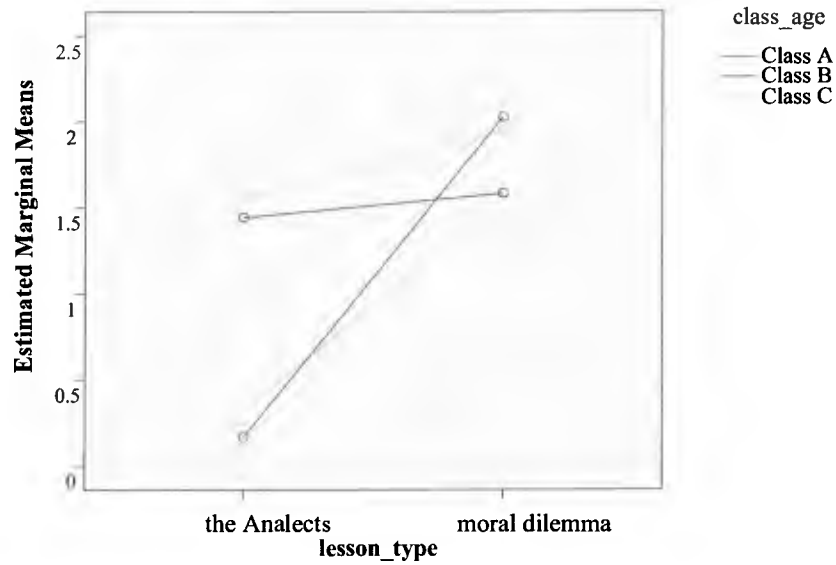


**Figure 8.7.** Time x class age trends for references back.  
(at lesson\_type = the Analects)

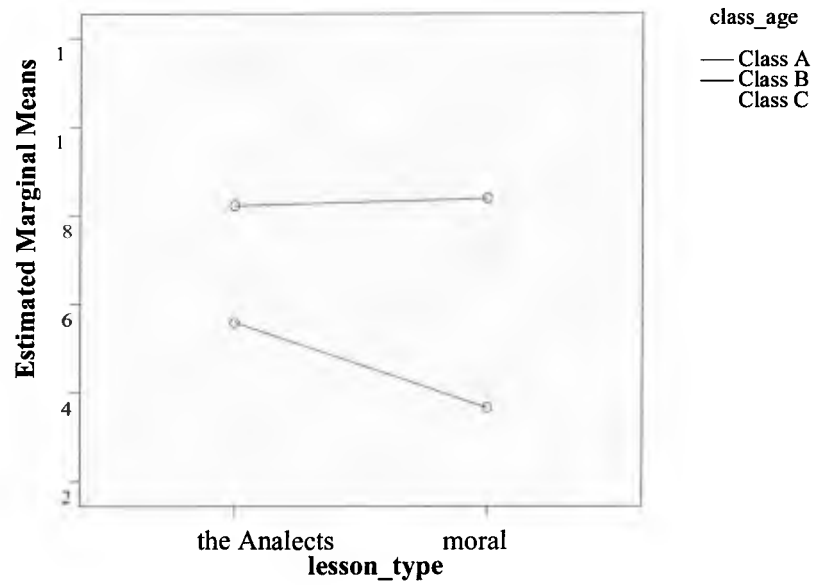


**Figure 8.8.** Time x class age trends for references back.  
(at lesson\_type = moral dilemma)

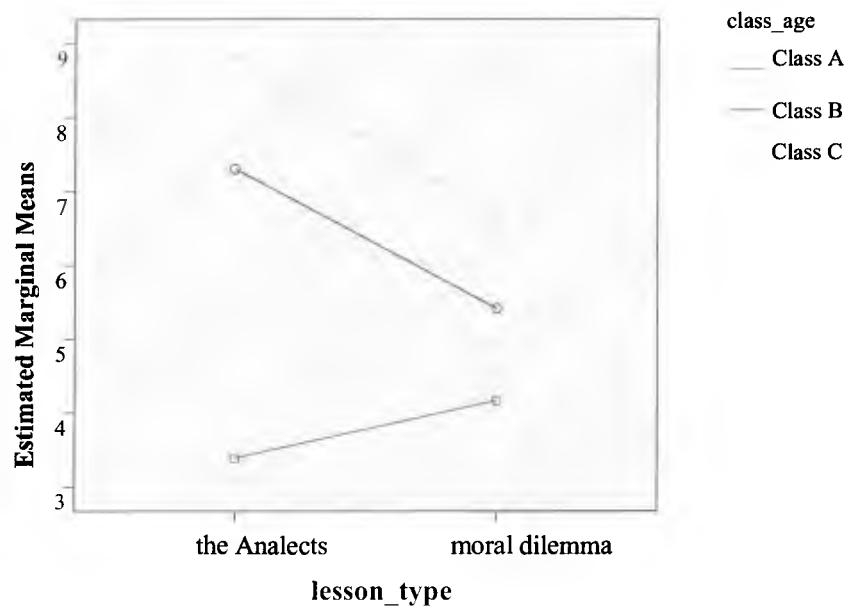


**Figure 8.9.** Age x lesson type trends for agreements.**Figure 8.10.** Age x lesson type trends for explanations.

**Figure 8.11.** Age x lesson type trends for references back.

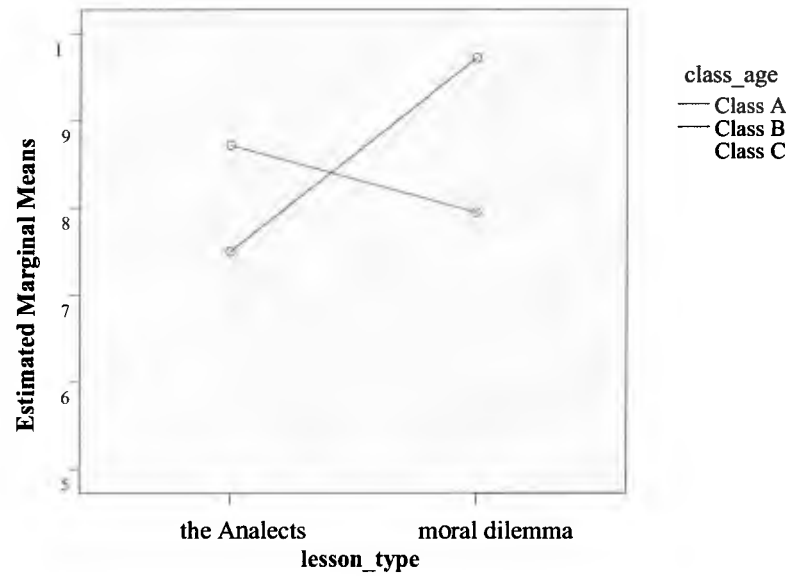


**Figure 8.12.** Age x lesson type trends for questions.





**Figure 8.13.** Age x lesson type trends for teacher involvement.



**Figure 8.14.** Time x age trends for propositions.

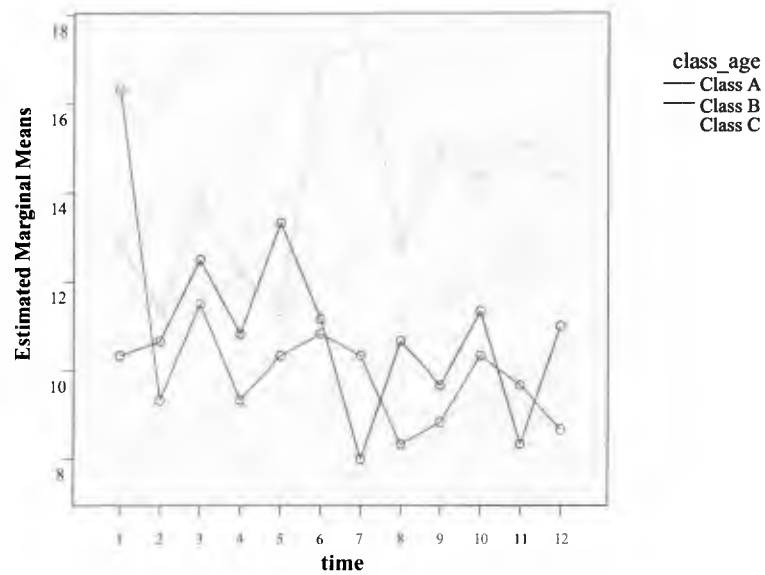


Figure 8.15. Time x age trends for agreements.

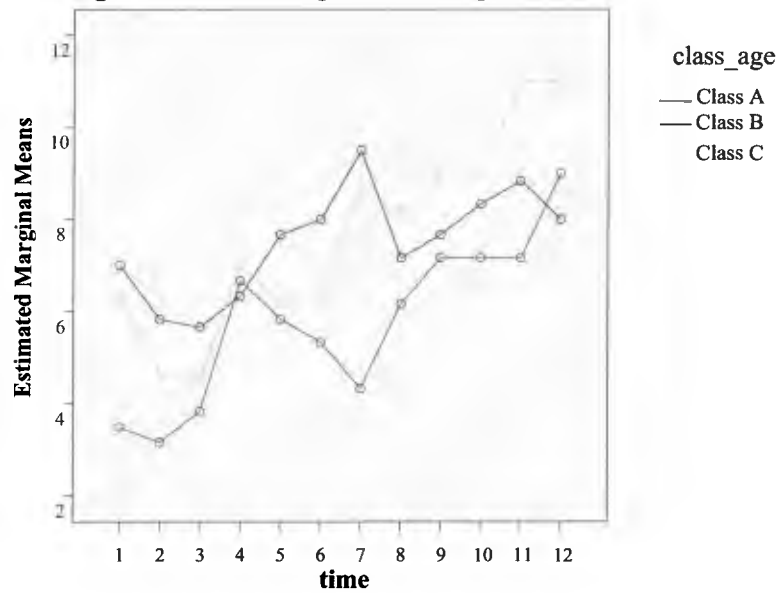
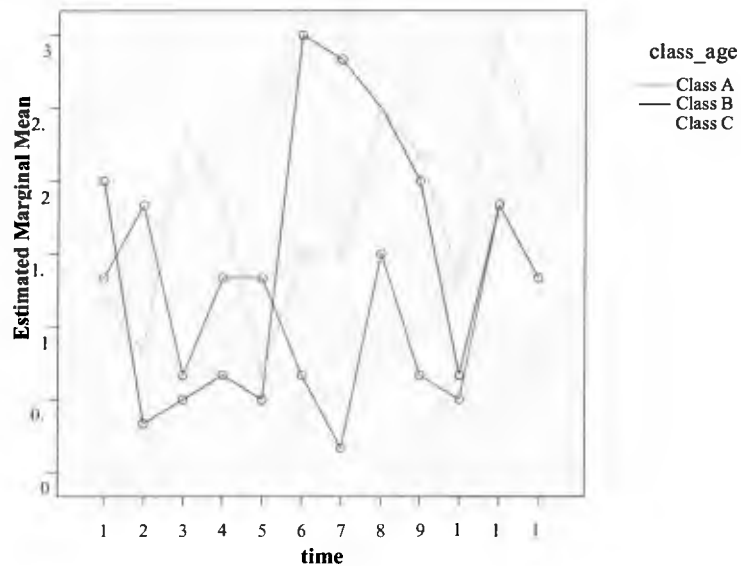
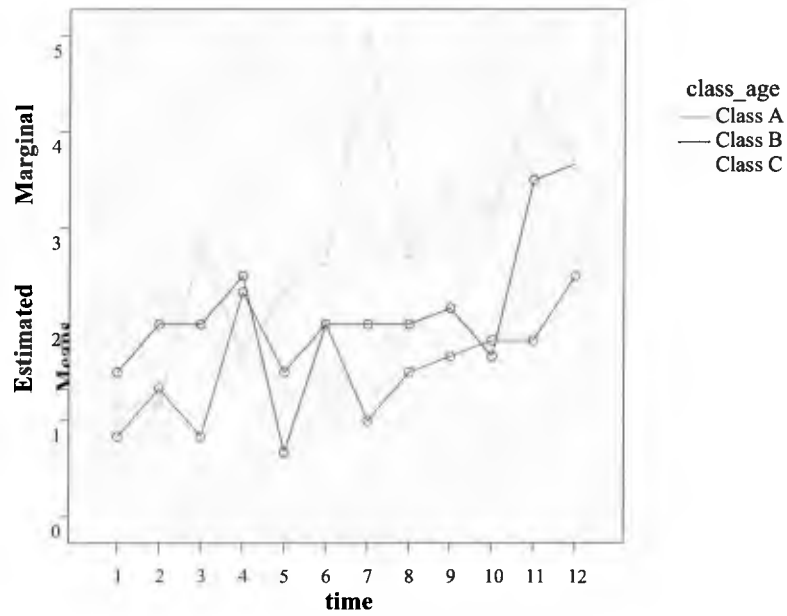


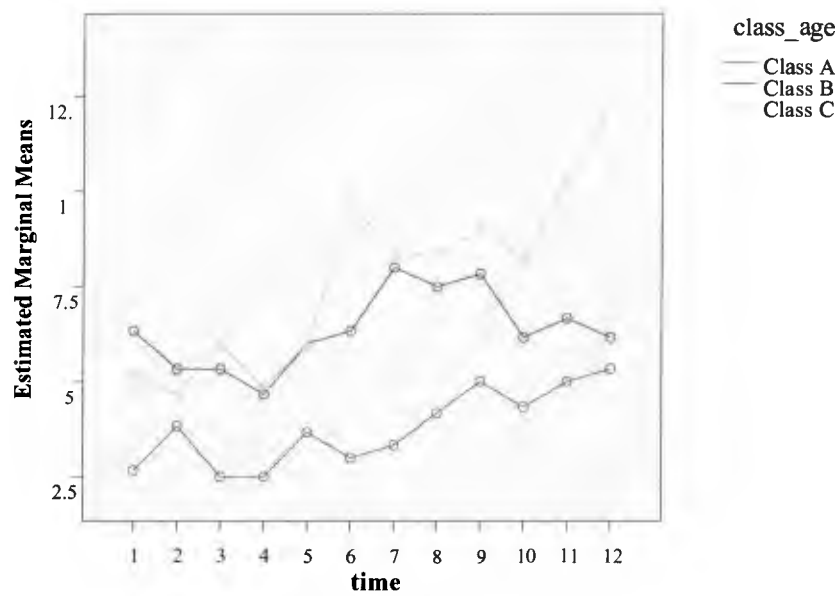
Figure 8.16. Time x age trends for explanations.

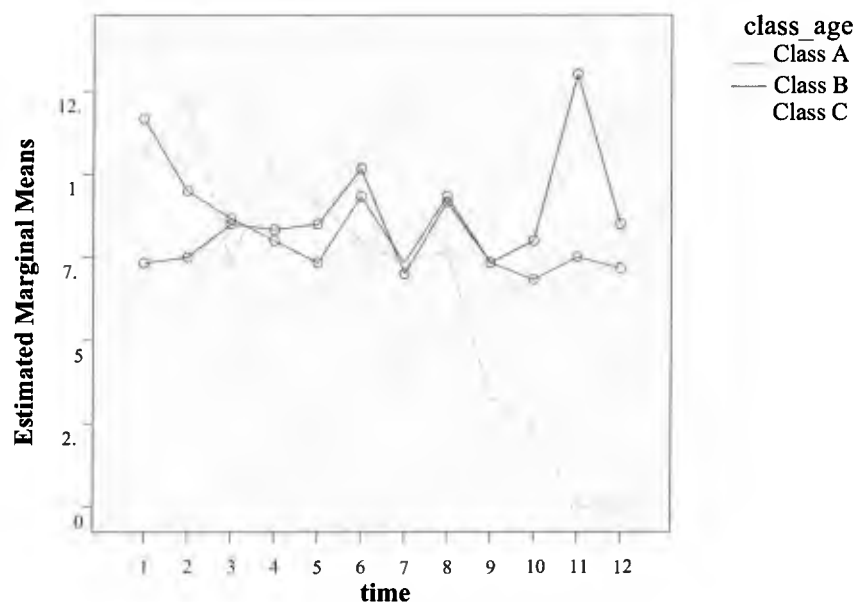


**Figure 8.17.** Time x age trends for elaborations.



**Figure 8.18.** Time x age trends for questions.



**Figure 8.19.** Time x age trends for teacher involvement.

### 8.3 The Post-Intervention Essay Test

Pupils' individual essays were scored using the same coding scheme as the dialogue, and total frequencies for each of the eight relevant codes (i.e., excluding teacher involvement) were computed. Since the essays varied in length and therefore in the opportunity for each code to arise, each pupil's totals were then divided by the number of words in their essay and multiplied by 100, to give a uniform measure of the rate of occurrence of a given code per hundred words. Data for the eight codes were then analysed separately for each age group using two-way ANOVAs, with lesson type and essay type as factors. Further one-way ANOVAs were computed to examine the effects of age group on the incidence of each code.

Tables 8.4a and 8.4b present the outcomes for the pupils in the youngest age group in

the Analects and moral dilemma intervention classes (A and A-1 respectively) as well as in the corresponding control class. Significant effects of lesson type were found for agreements, elaborations and resolutions. Agreements and resolutions occurred more frequently in essays produced by children in the moral dilemma intervention than by those in either the Analect or control conditions. Elaborations were produced more often by children in both of the intervention conditions than by those in the control condition. Effects of essay type were also found for elaborations and resolutions, with both being more likely to occur in the moral dilemma essay. There were no interactions between lesson type and essay type, however.

In general then, after the intervention, the pupils who had received the moral dilemma lessons showed better outcomes for agreements and resolutions than the other two classes, as well as showing gains for elaborations relative to the controls. The students in the Analects intervention only showed a benefit relative to the controls for elaborations. There were no signs of benefits from either intervention on other skills. It should be noted that the intervention pupils exhibited a better performance relative to the controls only in restricted ways despite their slightly higher language abilities. It should also be noted, however, that the apparently greater benefits of the moral dilemma lessons are not explicable in these terms, since the two intervention groups had comparable language levels.

Table 8.5a and 8.5b portray the outcome of the post-tests in the middle age group. For these pupils, the effects of lesson type were similarly restricted, but with a quite different pattern being exhibited. As with the youngest age group, there were significant differences between the classes for resolutions, but in this case, this was due to the pupils who had received the moral dilemma lessons performing worse than

either those in the Analects intervention or the controls, despite the fact that they had higher language abilities. There was also a significant effect of lesson type on explanations, with the Analects pupils producing more of these than either the moral dilemma or control pupils. However, this benefit was in fact restricted to those who were asked to write the Analects essay, giving rise to a significant lesson by essay type interaction; on the moral dilemma essay, the three classes of children performed very similarly. Main effects of essay type were found for four codes: propositions, agreements, references back and resolutions. Propositions occurred more frequently in the Analects essays, whilst agreements, references back and resolutions all occurred more often in the moral dilemma essays. Interestingly, given the specific effect of the Analects lessons on production of explanations in the Analects essays, those who received the Analects lessons were again the only pupils who produced resolutions in the Analects essays, though in this case this did not give rise to a significant interaction effect.

Post-intervention, then, in this age group it was the pupils who had received the Analects intervention who presented the better performance in spite of their lower language ability. However, the benefits of this intervention were restricted to explanations and resolutions, and appeared to be task-specific in character, since it was only on the Analects essay that they stood out.

Tables 8.6a and 8.6b show the results of the post-test for the oldest age group. For these students, the effect of lesson type was restricted solely to questions, with these occurring more often among those who had received the Analects lessons. There was also a significant effect of essay type on explanations, with these occurring more often in the Analects essays. Despite the lack of other significant effects, though, there was

something of the same tendency as in the middle age group for those who had received the Analects lessons to show more marked benefits relative to the other classes on the Analects essay. Explanations, elaborations, references back and questions were all more frequent in their Analects essays than they were for moral dilemma and control pupils, and with the exception of questions, to a greater extent than they were in their moral dilemma essays.

Table 8.7 shows the mean frequency of the different codes for each age group, collapsing across condition and essay type. One-way ANOVAs found significant age differences for propositions, resolutions and questions. The 7-8 age group produced more propositions than the other two groups, whilst resolutions and questions increased with age. There were no significant differences for other dialogic skills among these age groups, including perhaps most notably explanations and elaborations.

**Table 8.4a.** Mean rate of essay codes at post-test (SD in parentheses) for the age 7-8 pupils.

Measures	Intervention		Control		Lesson type effect	Essay type effect	Interaction effect
	A (Analects)	A-1(Moral dilemma)	A		F value (df =2, 60), partial eta sq	F value (df=1, 60) partial eta sq	F value (df =2, 60), partial eta sq
Post-test							
Proportion of proposition					ns	ns	ns
The Analects essay	6.43 (2.84)	6.63 (5.35)	7.80 (1.93)				
Moral dilemma essay	5.67 (3.22)	4.93 (1.46)	6.22 (3.00)				
Total	6.03 (3.01)	5.78 (3.90)	7.04 (2.57)				
Proportion of disagreement					ns	ns	ns
The Analects essay	0(N/A)	0(N/A)	0(N/A)				
Moral dilemma essay	0.39(7.46)	0(N/A)	0.15(0.51)				
Total	0.20(0.56)	0(N/A)	0.07(0.35)				
Proportion of agreement					6.168, p<0.05		ns
The Analects essay	0(N/A)	0.27(0.81)	0(N/A)		$\eta^2 = 0.17$		
Moral dilemma essay	0.17(0.60)	0.93(1.14)	0(N/A)				
Total	0.09(0.43)	0.60(1.02)	0(N/A)				



**Table 8.4b.** Mean rate of essay codes at post-test (SD in parentheses) for the age 7-8 pupils.

Measures	Intervention		Control		Lesson type effect	Essay type effect	Interaction effect
	A (Analects)	A-1(Moral dilemma)	A		F value (df =2, 60), partial eta sq	F value (df=1, 60) partial eta sq	F value (df =2, 60), partial eta sq
<b>Post-test</b>							
Proportion of explanation					ns	ns	ns
The Analects essay	1.46 (2.05)	2.07 (2.23)	0(N/A)				
Moral dilemma essay	1.87 (1.52)	1.25 (1.52)	1.05 (2.34)				
Total	1.67 (1.77)	1.66 (1.90)	0.50 (1.67)				
Proportion of elaboration					4.196, p<0.05	7.853, p<0.05	ns
The Analects essay	1.41 (1.27)	0.97 (1.21)	0.58(0.87)		$\eta^2 = 0.12$	$\eta^2 = 0.12$	
Moral dilemma essay	2.13 (0.99)	1.95 (1.29)	0.92 (0.99)				
Total	1.66 (1.22)	1.46 (1.32)	0.74 (0.92)				
Proportion of reference back					ns	ns	ns
The Analects essay	0.12(0.40)	0(N/A)	0.19(0.64)				
Moral dilemma essay	0.10(0.37)	0.19(0.57)	0(N/A)				
Total	0.11(0.37)	0.10(0.41)	0.10(0.46)				
Proportion of resolution					5.490, p<0.05	4.429, p<0.05	ns
The Analects essay	0(N/A)	0.27(0.81)	0(N/A)		$\eta^2 = 0.16$	$\eta^2 = 0.07$	
Moral dilemma essay	0.11(0.40)	0.89 (1.08)	0.15(0.51)				
Total	0.06(0.29)	0.58 (0.98)	0.07(0.35)				
Proportion of question					ns	ns	ns
The Analects essay	0(N/A)	0(N/A)	0(N/A)				
Moral dilemma essay	0.11(0.40)	0(N/A)	0(N/A)				
Total	0.06(0.29)	0(N/A)	0(N/A)				

**Table 8.5a.** Mean rate of essay codes at post-test (SD in parentheses) for the age 9-10 pupils.

Measures	Intervention		Control		Lesson type effect		Essay type effect		Interaction effect	
	B (Analects)	B-1(Moral dilemma)	B		F value (df =2, 51), partial eta sq		F value (df=1, 51) partial eta sq		F value (df =2, 51), partial eta sq	
Post-test										
Proportion of proposition										
The Analects essay	3.75 (02.40)	3.56 (0.96)	2.94 (1.56)		ns		33.495, p<0.05		ns	
Moral dilemma essay	1.61 (1.03)	1.19 (0.87)	1.43 (0.95)				$\eta^2 = 0.40$			
Total	2.37 (1.89)	2.47 (1.51)	2.08 (1.42)							
Proportion of disagreement										
The Analects essay	0(N/A)	0(N/A)	0(N/A)		ns		ns		ns	
Moral dilemma essay	0.18(0.44)	0.08(0.26)	0(N/A)							
Total	0.12(0.36)	0.03(0.18)	0(N/A)							
Proportion of agreement										
The Analects essay	0(N/A)	0(N/A)	0(N/A)		ns		27.846, p<0.05		ns	
Moral dilemma essay	0.24(0.34)	0.44(0.43)	0.71(0.51)				$\eta^2 = 0.35$			
Total	0.15(0.29)	0.20(0.36)	0.40(0.52)							

**Table 8.5b.** Mean rate of essay codes at post-test (SD in parentheses) for the age 9-10 pupils.

Measures	Intervention		Control		Lesson type effect	Essay type effect	Interaction effect
	B (Analects)	B-1(Moral dilemma)	B		F value (df =2,51), partial eta sq	F value (df=1, 51) partial eta sq	F value (df =2,51), partial eta sq
Post-test							
Proportion of explanation					20.312, p<0.05	ns	20.482, p<0.05
The Analects essay	3.27 (1.90)	0 (N/A)		0(N/A)	$\eta^2 = 0.44$		$\eta^2 = 0.44$
Moral dilemma essay	0.99 (0.63)	1.05 (1.12)		0.90 (0.50)			
Total	1.79 (1.63)	0.48 (0.91)		0.51 (0.59)			
Proportion of elaboration					ns	ns	ns
The Analects essay	1.17 (0.32)	0.93 (0.48)		1.41(1.30)			
Moral dilemma essay	1.32 (0.81)	1.08 (0.67)		1.31 (0.28)			
Total	1.27 (0.67)	1.0 (0.57)		1.36 (0.83)			
Proportion of reference back					ns	6.780, p<0.05	ns
The Analects essay	0(N/A)	0(N/A)		0(N/A)		$\eta^2 = 0.12$	
Moral dilemma essay	0.31(0.37)	0.45(0.16)		0.06(0.16)			
Total	0.20(0.33)	0.22(0.11)		0.32(0.12)			
Proportion of resolution					4.605, p<0.05	16.820, p<0.05	ns
The Analects essay	0.49(0.56)	0(N/A)		0(N/A)	$\eta^2 = 0.15$	$\eta^2 = 0.25$	
Moral dilemma essay	0.58(0.31)	0.40 (0.40)		0.71(0.51)			
Total	0.55(0.40)	0.18 (0.34)		0.40(0.52)			
Proportion of question					ns	ns	ns
The Analects essay	0.49(0.56)	0.26(0.43)		0(N/A)			
Moral dilemma essay	0.15(0.34)	0.07 (0.18)		0.05(0.15)			
Total	0.27(0.44)	0.17 (0.34)		0.03(0.12)			

**Table 8.6a.** Mean rate of essay codes at post-test (SD in parentheses) for the age 11-12 pupils.

Measures	Intervention		Control		Lesson type effect		Essay type effect		Interaction effect	
	C (Analects)	C-1(Moral dilemma)	C		F value (df =2, 37), partial eta sq		F value (df=1, 37) partial eta sq		F value (df =2, 37), partial eta sq	
<b>Post-test</b>										
Proportion of proposition					ns		ns		ns	
The Analects essay	2.09 (1.86)	2.14 (3.18)	2.43 (1.40)							
Moral dilemma essay	0.80 (0.44)	1.95 (1.49)	2.93 (1.23)							
Total	1.56 (1.57)	2.04 (2.39)	3.18 (1.28)							
Proportion of disagreement					ns		ns		ns	
The Analects essay	0(N/A)	0(N/A)	0(N/A)							
Moral dilemma essay	0(N/A)	0.31(0.58)	0.11(0.27)							
Total	0(N/A)	0.15(0.43)	0.06(0.19)							
Proportion of agreement					ns		ns		ns	
The Analects essay	0(N/A)	0.73(1.33)	0(N/A)							
Moral dilemma essay	0.38(0.29)	0.40(0.47)	0(N/A)							
Total	0.16(0.26)	0.56(1.00)	0(N/A)							
Proportion of explanation					ns		7.543, p<0.05 $\eta^2 = 0.17$		ns	
The Analects essay	2.70 (2.27)	1.36 (1.40)	1.02(1.58)							
Moral dilemma essay	0.80 (1.00)	0.58 (0.60)	0 (N/A)							
Total	1.92 (2.05)	0.97 (1.11)	0.51 (1.20)							

**Table 8.6b.** Mean rate of essay codes at post-test (SD in parentheses) for the age 11-12 pupils.

Measures	Intervention		Control	Lesson type effect		Essay type effect		Interaction effect	
	C (Analects)	C-1(Moral dilemma)	C	F value (df =2, 37),	partial eta sq	F value (df=1, 37)	partial eta sq	F value (df =2, 37),	partial eta sq
<b>Post-test</b>									
Proportion of elaboration				ns		ns		ns	
The Analects essay	1.68 (1.88)	1.06 (1.19)	0.78 (0.83)						
Moral dilemma essay	0.62 (0.53)	1.04 (0.57)	0.98 (0.20)						
Total	1.25 (1.55)	1.05 (0.90)	0.88 (0.58)						
Proportion of reference back				ns		ns		ns	
The Analects essay	0.88 (1.50)	0(N/A)	0(N/A)						
Moral dilemma essay	0.18 (0.25)	0.34(0.49)	0(N/A)						
Total	0.59 (1.19)	0.17(0.38)	0(N/A)						
Proportion of resolution				ns		ns		ns	
The Analects essay	0.88(0.92)	0.73 (1.33)	0.83(0.20)						
Moral dilemma essay	0.63(0.85)	0.79(0.55)	0.34(0.42)						
Total	0.78(0.70)	0.76(1.00)	0.21(0.34)						
Proportion of question				4.192, p<0.05		ns		ns	
The Analects essay	0.88(0.92)	0.12(0.30)	0.45(0.89)	$\eta^2 = 0.19$					
Moral dilemma essay	0.96(1.12)	0.15(0.26)	0.27(0.66)						
Total	0.91(0.97)	0.13(0.27)	0.36(0.75)						

**Table 8.7.** Mean rate of essay codes at post-test (SD in parentheses) for all three age groups, collapsed across condition and essay type.

Dialogic variables	7-8 year-old pupils (N=66)	9-10 year-old pupils (N=57)	11-12 year-old pupils (N=43)	Age effect, F value (df=2, 163)
Proposition	6.32 (3.14)	2.34 (1.59)	2.17 (1.89)	57.122, $p<0.05$
Disagreement	0.10 (0.41)	0.05 (0.23)	0.07 (0.26)	ns
Agreement	0.20 (0.63)	0.24 (0.39)	0.25 (0.61)	ns
Explanation	1.26 (1.83)	0.88 (1.25)	1.22 (1.65)	ns
Elaboration	1.28 (1.21)	1.17 (0.68)	1.08 (1.13)	ns
Reference back	0.10 (0.41)	0.08 (0.22)	0.29 (0.80)	ns
Resolution	0.21 (0.62)	0.35 (0.43)	0.61 (0.76)	5.940, $p<0.05$
Question	0.02 (0.18)	0.17 (0.35)	0.50 (0.81)	13.813, $p<0.05$

#### **8.4 Discussion and conclusions**

Though the data presented above are complex in character, it can be argued that a relatively straightforward picture emerges. First of all, there are relatively clear signs that both types of intervention led to improvements in pupils' ability to discuss the materials they were presented with in a more critical and exploratory fashion. As the lessons progressed, all three age groups showed increasing differentiation of dialogue despite the reduction or even removal of teacher support during group discussion. Disagreements, agreements, elaborations and questions all increased in frequency whilst propositions remained roughly constant, and though the pattern for explanations was less distinct, the general trend was upward for these too. References back and resolutions were the only codes not to show a systematic increase, suggesting that the intervention lessons failed only in terms of encouraging greater coordination of the ideas that pupils were producing – arguably the hardest aspect of critical thinking both to promote and to achieve.

Secondly, to the extent that there were any signs of difference between the impact of the Analects and moral dilemma interventions, these were in general marginally in favour of the former. In particular, for disagreements, agreements and explanations there was more consistent progress over the course of the Analects lessons, and greater fluctuation across the moral dilemma lessons. There are two important qualifications that should be noted, however. The first is that teacher input tended to be greater in the Analect lessons, suggesting that any greater benefit they had pedagogically came at the expense of demanding greater teacher effort. The second is that these benefits seemed on balance to be restricted to the two older age groups. The youngest age group showed less sign of gain in questions in the Analect lessons than they did in the moral dilemma lessons, and they also produced fewer agreements and

explanations over the course of those lessons. For the older two age groups, the two interventions were much more comparable in these respects. Whilst a direct connection cannot be established within the present research, it is interesting to note that the relative benefit of the moral dilemma lessons over the Analect lessons in the youngest age group is consistent with parental reports of being more likely to discuss moral dilemmas than Analects or similar forms of epithet at home, especially where children were younger. The effect may be one of difference in the relative familiarity of the materials for younger children, therefore, as hypothesised – even if in the opposite direction to that initially anticipated. This correspondence with the parents' usage suggests that the Analects might provide a better resource for promoting critical thinking once children have attained a certain level of understanding.

Thirdly, if the intervention lessons led to greater sign of critical thinking and discussion within the group activities, there was at best only limited evidence of these gains extending to related exercises, with pupils in the intervention conditions showing little difference relative to the control pupils in performance on the majority of codes in the post-test essays. Where there were signs of benefit, however, it is notable that these fit the picture that emerges from the dialogue data, of children in the youngest age group gaining more from the moral dilemma lessons, whilst the two older age groups gained more from the Analect lessons, although with positive effects being limited to the Analect essay task rather than spreading more widely.



## **Chapter 9: Outcomes from the Teachers' Interview**

### **9.1 Introduction**

The aim of interview was to investigate the views of teachers, based on their teaching experiences, regarding six issues: 1) the current primary school curriculum in Taiwan; 2) the training of children's thinking; 3) teaching critical thinking; 4) use of the Analects in teaching; 5) use of moral dilemmas in teaching, 6) the use of dialogic teaching. The following chapter presents the essential points from the eight teachers' interviews that were conducted in the primary school. Participants included the Educational Administrator, who had 20 years teaching experience, Teacher CM with 23 years experience, Teacher W with 13 years experience, Teacher CF with 20 years experience, Teacher YF with 14 years experience, Teacher L with 28 years experience, Teacher YM with 24 years experience, and Teacher H with 22 years experience. The interview was conducted after the intervention had been completed.

### **9.2 Analysis of the interview data**

All the interviews were audio-recorded and then transcribed, and since the numbers involved were not large, the transcripts were all examined in turn for common themes (i.e. broad points mentioned by more than one person) relevant to the objectives of the research. On this basis, six distinct themes were identified, each of which is examined in more detail below. All the teachers talked about the current curriculum in Taiwan, so the first theme was set up as 'circumstances of current primary school curriculum in Taiwan'. Moreover, a number of teachers mentioned that the traditional way to cultivate pupils' thinking ability was in the context of maths, but others had a different view. Therefore, the second theme was 'training children's thinking via maths, and developing children's judgment'.

Extending this theme, the methods used to develop children's critical thinking were discussed as being affected by a range of conceptions, and as having been impacted upon by American education. Thus, the third theme was entitled 'the concept of critical thinking involves a strategy of fostering cultural connections and practical ways of development'. In addition, as requested, the teachers reflected on the application of the Analects and moral dilemma stories in teaching. The fourth and fifth themes were therefore 'the concept of teaching using the Analects', and 'the application and value of moral dilemma teaching'. Finally, the nature and value of employing dialogic teaching were discussed; therefore, the sixth theme was 'the concept of dialogic teaching'. A breakdown of the points noted in relation to each theme is presented below.

### **9.3 The circumstances of the current primary school curriculum in Taiwan**

The primary school curriculum in Taiwan is based on the national curriculum – the nine year integrated curriculum including Chinese, maths, science, social science, arts and humanities, English, computing, health and physical education. A teacher has to teach most subjects for 20 lessons a week, except English, computing, music, and physical education. The courses are fixed, and Teacher CM said: "The only course which can be adjusted is the flexible lesson, which has been used to enhance Chinese and maths learning. Mostly, the flexible lesson has been applied to reinforce reviewing the main subjects." There is no specific course in the primary school to train children's critical thinking; however, the Educational Administrator suggested that all fields could be used to develop children's thinking ability. For example, the lessons covering social science might refer to some current circumstance in society, encouraging pupils to discuss and present their own ideas and thoughts.

#### **9.4 Training children's thinking ability via maths, and developing children's judgment**

The teachers had both overlapping and distinct views of how to cultivate children's thinking. Most teachers thought developing children's thinking ability involved both maths practice and cultivating children's reasoning. The Educational Administrator stated that language and literature do not have single recognised theories or principles, and are merely based on personal viewpoints. The relationships of cause and effect for these have very different criteria. However, the thinking of maths and science has a standard system to follow. There is no single subject that can be used to train children's thinking, but only maths and science have been applied to train children's thinking by the majority of teachers. Teacher W also thought the thinking of maths and the thinking of language and literature, and of social science are different. However, she could not determine how to compare the development of these two types of thinking, though she thought performance in maths is related to pupils' intelligence. Teacher L claimed that although maths has fixed formulas and regulations, she liked to use applications of these to train children's thinking rather than employing a single simple question. With regard to language and literature, she requires children to do sentence making, reading of articles and writing of reflective essays. The intention of both types of exercise is to train pupils' reasoning and problem solving.

Nevertheless, some teachers thought open discussion would be better training children's thinking than applying maths. Teacher YM argued that cumulative thinking for pupils is based on life experience and practice rather than on knowledge acquisition. Discussion would therefore be a better approach to developing children's

thinking. By means of discussion, pupils may reflect on their life experience. They would apply this experience further to solve any mathematical questions. Teacher CF and Teacher W presented the same view as Teacher YM. However, Teacher H presented opposite views. She claimed that developing children's thinking ability is based on mathematical capability, since open dialogic training is hard to use to make children catch up points and to focus; if children have well-established mathematical ability, it would make them more rounded.

### **9.5 The idea of critical thinking**

Despite this, the teachers thought critical thinking is concerned with language and literature. Teacher CM stated generally that we found the development of children's thinking ability is related to language and literature ability. The training of this is via a focus on the analysis of articles. The Educational Administrator said that critical thinking needs to have structured criteria for training in the same way as maths and science employ systematic regulation to train children's thinking. Language and literature constitutes another approach to developing children's critical thinking, which is based on social norms and morals. Teacher W shared the same view, and extended this further by adding that developing children's critical thinking is beneficial for their attitudes about life and their problem solving ability. However, she saw it as being of limited help for learning ability.

#### *9.5.1 Strategies for developing critical thinking*

There was no specific course to develop children's critical thinking in the primary school. However, Teacher W mentioned that the school had provided a programme, which was about using current information to develop children's critical thinking. For example, teachers offered pupils some commercial advertisements and got them to

discuss the value of them. In addition, Teacher YM said that developing pupils' critical thinking actually involves comprehensive courses such as life education, which would encourage children to implement discussion.

However, other teachers thought the method used to train pupils' critical thinking was based on teacher's teaching experiences. The Educational Administrator said that teachers should cultivate children's critical thinking by means of all subjects. The strategy is to give pupils proper questions including a clear situation and cues to their answers. Teacher CM had a similar view about designing proper open questions by means of stories encouraging children's thinking. He said: "give children enough time to think and support them to present their viewpoints. However, designed questions should not have definite right or wrong answers. This would encourage children to think more autonomously and creatively, especially slow learners. If teachers design questions with definite right or wrong aspects, it may affect some shy pupils and slow learners who are afraid of speaking their thoughts. It is better to use some situation, which probably happens in daily life, to guide their thinking because children have experienced different lives and may have diverse thoughts about similar circumstances."

Teacher L and Teacher CF had similar ideas that incidents and problems happening in daily life provide a better way to develop children's critical thinking. Teacher L claimed that when children had problems in daily life, they would require parents and teachers' help directly. Teachers could not give them solutions right away, and offer questions instead to encourage their thinking to find resolutions by themselves. Although Teacher CF had a similar view, she stated that teachers did not merely provide questions, but should also encourage whole class discussion to motivate

children's thinking and speaking.

#### *9.5.2 Cultural connections that might be of use*

All teachers thought the training of children's thinking in Taiwan is based on Western theories. The Educational Administrator said: "The Taiwanese educational system is derived from the American educational system, so the principle of developing children's thinking in Taiwan has been affected by American educational principles. The traditional four books and five classics teaching has vanished in Taiwanese education." Teacher CM mentioned that our own national principles for cultivating children's thinking are very few. Basically, teachers learned Western theories about developing children's thinking in the university. As their teaching experience grows, teachers improve their skills based on previous learning, to integrate real situations to develop their pupils' reasoning. Teacher W and Teacher YM both claimed that in the alternative method of traditional teaching and learning, pupils have been encouraged to develop their creative and critical thinking. Collaborative small group learning unquestionably comes from Western culture. It focuses on completing a task collaboratively and cooperatively. Teacher H stated that traditional Chinese society was very closed, and only focused on authority. However, it has been changed by Western culture. Teachers respect children's perspectives in the classroom and encourage them to think critically and creatively, as well presenting their ideas openly and publicly.

#### *9.5.3 Practical ways of developing critical thinking*

Most teachers thought the essential component in developing children's critical thinking is the application of open-ended questions in terms of stories or contemporary social issues to enhance the ability of problem solving and reasoning.

However, it was difficult to implement. The Educational Administrator stated that training children's thinking ability tends to employ open-ended questions, through which children's thoughts can be exposed. However, this is not suitable for all pupils in Taiwan, because not all students like to present their views. Thus, it takes time to encourage children to express their thoughts, and they may not show their ideas thoroughly and openly at all ages.

In addition, Teacher CM claimed that it is clear some students perform poorly on maths, but the problem is not about maths ability; it is concerned with language and literature ability. Children's critical thinking is about the ability of problem solving. If the problem solving techniques become more concrete, maths ability would improve gradually. For example, teachers offer a story to slow learners, and if they organise points in this story systematically, it refines their progress. Actually, some students read a whole article, but cannot identify points in it after reading. They do not even understand what the story aims to represent. If students cannot summarise from reading, they surely do not have the ability of reasoning. Generally, most teachers very rarely train children's reasoning. They may think as long as children have good maths ability, their reasoning should be good as well. In fact, children's reasoning gets worse and worse. Therefore critical thinking is related to the development of children's reasoning.

Teacher W extended these ideas further, to apply them to small group discussion. She also thought that teachers should offer very specific questions to help children to do in-depth thinking, as well providing them with different issues to discuss. If a question is too big, it is very difficult for children to implement discussion. Generally, Teacher H thought discussion is the main means to get children to practice critical thinking.

She used to apply discussion in her social science class. There are many contemporary social issues such as whether ecological protection is more important or developing economic growth is more crucial. This is a good issue to offer for small group or a whole class discussion. Pupils could present their thoughts openly and form a consensus at the end of discussion. This would be a more effective practice for developing children's critical thinking.

## 9.6 The concept of teaching using the Analects

Analects teaching is not mainstream or a major requirement for children, but it is a supplementary reading in the primary school. The teachers had diverse views about this teaching.

### 9.6.1 Actual use of the Analects in teaching

Most teachers rarely taught the Analects to children. However, they thought learning the Analects could somehow develop children's moral education. When they applied the Analects in teaching, they merely guided pupils to read and recite the text, and to explain the text further. Teacher W said: "I seldom teach *the Analects of Confucius*. Occasionally, I might apply some quotations from the Analects in Chinese lessons. For example, when I talk about the importance of time, I might refer to . . . . .  
. . . . . 'Shi zhe lu si fu! Bu she zhou ye.' which means time elapses fast whatever day and night. But I have not used a whole lesson content based on *the Analects*. When I mention the quotation in the *Analects*, I explain the connotation and discuss it a bit with pupils."

However, the Analects is actually a required supplementary reading for pupils in the school. Teacher CF and Teacher H mentioned that the school gives an additional



'knowledge saving book' to pupils. The knowledge book is about traditional Chinese classic reading involving the *Analects*. Pupils should recite and memorize one or two texts in a week. If pupils implement the task well, they can collect points to get an award later. The selection of the content is based on different grades. Teacher CF is a supporter of using the *Analects*, and has taught the *Analects* to children often. She said: "When I teach the *Analects* to children, I apply the text to real examples and news to make children understand it easily, otherwise the text for them is just like symbols. Because my pupils are young children, they cannot learn and recite the *Analects* without proper instances and explanations. As long as teachers make the *Analects* lively and do not implement book teaching only, children would be interested in learning the *Analects* and use it in their life. However, Teacher CM had opposite views. He argued that he had never taught the *Analects* to pupils because he thought teachers cannot employ anyone's subjective theories in teaching. He usually offered an artificial story to train children's ability to determine conceptions of right and wrong.

#### 9.6.2 The value of teaching the *Analects*

Most teachers thought that the *Analects* not only develops pupils' moral education but could also develop children's thinking ability because the content of the *Analects* can be integrated with current circumstances for discussion and judgment. Even though Confucius offered viewpoints about life in terms of ancient society, this can still be combined with current situations to produce extended discussion. Teacher CF and Teacher YF mentioned that Confucius' sayings are based on ancient society. This can motivate children to discuss differences between early and current societies in terms of Confucian concepts. Another idea is to get children to think about whether Confucius' conversations could be applied to present circumstances properly. These

would be good issues to encourage pupils' discussion. However, this only could apply to older children. It would be difficult to implement this approach with younger children because of limitations in their cognitive abilities and literacy. Although Teacher CM agreed the *Analects* can be helpful for children because some stories in the *Analects* are beneficial to motivate children's thinking, he said that he would not simply reinforce the fact that either Confucius or Mencius says something and merely tell pupils this story happened in ancient times.

### 9.7 The application and value of moral dilemma teaching

Teaching employing moral dilemmas was used rarely by the teachers in the primary school. Some teachers had never used it, but some of them sometimes used it as a strategy to deal with deviant behaviour from pupils. The Educational Administrator said: "There is no specific subject related to moral dilemma teaching, it merely could be said that if teachers found some deviant behaviours and actions in the class, they would take a chance to apply this to discuss further with pupils. But teachers may not intentionally apply moral dilemma to develop children's thinking." Teacher CM and Teacher YM, who were tutors in grade five, thought moral dilemma teaching was seldom employed with older children, it was merely suitable for younger children. However, Teacher W, who was also a tutor in grade five, and Teacher L claimed that they have applied moral dilemma teaching in Chinese and social science lessons, and in daily life to develop children's thinking. Teacher H, who was a tutor in grade four, mentioned that she has used moral dilemma stories with children to inquire into their viewpoints and encourage them to present ideas openly. She said she would also draw a proper conclusion with children in terms of social norms and laws.

With regard to the value of moral dilemma teaching, the teachers did not mention too

much about this. But Teacher W, Teacher L and Teacher H all thought moral dilemma teaching is beneficial for developing children's reasoning and educating pupils about deviant attitudes in daily life by means of stories and real incidents. Pupils could be encouraged to discuss further by using dilemmas, and so progress their thinking and talking.

### **9.8 The concept of dialogic teaching**

Most teachers thought dialogic teaching is supposed to be a conversation between a teacher and pupils in the classroom. A teacher provides questions to encourage discussion and the offering of ideas interactively. Teacher YF explained further that by means of discussion, a teacher and pupils should give feedback to one another and reach a consensus in the end. However, Teacher W had a different view about dialogic teaching. She said: "dialogic teaching is supposed to offer an individual matter for children without answers and to motivate children's reasoning. But this is applied to guide children's deviant behaviours only."

#### *9.8.1 Practical use of dialogic teaching*

Dialogic teaching was not used often by teachers. Some teachers merely occasionally offered questions to obtain answers from whole class discussion. The Educational Administrator mentioned that a whole class discussion would take place in most classes, but the disadvantage is that only a few students like to propose their ideas. Small group discussion needs more time to implement, but every student has more chance to present their ideas. Teacher W argued that the current curriculum in primary schools is diverse and complicated so that it has been very difficult to implement discussion in the class. Also, teachers are very stressed because of the tight curriculum. However, if teachers design some open-ended questions for discussion,

whatever the subjects are, this will help to develop children's thinking ability.

Teacher CM stated that in terms of his teaching experience, this method has been used very infrequently. He merely applied it in daily life education to communicate with children about deviant behaviours and attitudes. If and when children have problems, he would talk to them, and offer them proper suggestions. Teacher CF, who was a tutor in grade four, mentioned that dialogic teaching is appropriate only for older children. She thought dialogic teaching was very difficult to use with her students and so was not used in her class at all because of pupils' immature learning ability.

However, Teacher L, who was a tutor in grade two, had a different view. She claimed that dialogic teaching was used often in the daily life course, which employs many controversial issues for classroom discussion to develop children's reasoning. Teacher YM said similarly that he used dialogic teaching sometimes to develop pupils' thinking in the social science course.

#### *9.8.2 Actual use of dialogic teaching in group work*

Some teachers thought it was difficult to implement dialogic teaching in group work, and therefore did not use it often. The Educational Administrator mentioned that there are nearly 30 pupils in a class. If a teacher would like to engage with every small group discussion, it is very difficult and it takes time to do it. However, in terms of his own teaching experience, he had used it in science lessons. He used to divide pupils into small groups to carry out experiments. In general, every group just needed to show the result of the experiment. The discussion in the process was not focused on. At the end of experiment lessons, the representative of each group merely reported the result.

Teacher CM stated that he had tried dialogic teaching for 6 or 7 years with small groups. Pupils always sat in small groups in order to implement group work. However, it did not have effective results so he changed to the traditional pattern of seating students in pairs. This is much better than seating them in small groups. Perhaps dialogic teaching within group work is more effective for younger children. With older children it is very difficult to carry out group-based dialogic teaching because of the tight curriculum. The traditional seating pattern is better for older children's learning, though occasionally he did use small group discussion.

However, Teacher CF argued that she had tried dialogic teaching in group work for older children. She gave themes for small group discussions and found older children could discuss effectively because of their more mature thinking ability. Teacher YM also required older children worked in small groups in social science lessons. For instance, pupils had to collaborate to discover the variety of Taiwanese tribes via internet as part of small group work.

Dialogic teaching using group work also could help develop younger children according to Teacher L. She claimed that sometimes she applied small group discussion to develop children's thinking and talking in different lessons or in the daily life course, and used small group talk to feed into a whole class discussion. However, she encouraged pupils to judge positive matters. For example, when someone had a birthday in her class, she would hold a birthday celebration and ask children to discuss advantages of birthdays in small groups, and then present on these more openly.

### *9.8.3 The value of using dialogic teaching*

The teachers had different views of the value of applying dialogic teaching. Most teachers offered positive perspectives. Teacher L stated that classroom talk is useful for teachers to understand children's thinking whether correct or deviant. If teachers use dialogic teaching often either in lessons or daily life, we can be aware of children's situations at school or home, and solve any problems they or their family are having. But Teacher CF and Teacher H had different positive views. They claimed that pupils' thinking ability could be progressed by means of dialogic teaching. This is very beneficial for enhancing pupils' reasoning. Also pupils would be pleased to have teachers accept and listen to their views.

In contrast, Teacher CM had a negative attitude to dialogic teaching. He argued that it is not efficient for children's thinking, and is only helpful for slow learners. Because of private cram schools are prevalent in Taiwan, most students had already learned regular school courses there in advance, so that quick learners were not interested in either learning or discussion in lessons. As a result, dialogic teaching was applied very little. Mostly, he liked to use the guidance mode of teaching which involved designing a topic for children to think about without discussion, in order to avoid slow students relying on answers from someone else and having no chance to think individually. He gave time for students to think first, and pupils offered answers afterward. He thought this was the effective way to enhance children's thinking equally.

## **9.9 Discussion and conclusion**

Six main points arise from the teachers' interviews. First of all, the curriculum in the primary school is based on the national nine year integrated curriculum, and this does not have a specific course for developing pupils' critical thinking. Secondly, although

some teachers thought maths offers the best training to develop children's thinking, many argued that classroom discussion was a beneficial method that could be applied in all subjects to cultivate pupils' reasoning. Thirdly, the notion of critical thinking is derived from Western concepts that have found application in Taiwan, and the skills to train children's reasoning would vary according to teacher's experience. Most felt that classroom discussion is the effective way to train children's critical thinking.

Fourthly, teachers seldom used teaching involving the *Analects* to cultivate children's thinking, though there was a programme to promote learning of the *Analects* in the primary school. Despite this, they agreed that the *Analects* teaching could be beneficial for moral education and developing children's thinking ability. Fifthly, moral dilemma teaching was also rarely used in lessons. However, some teachers did employ it to guide pupil's deviant behaviours, applying it in the lessons of life and science. The teachers who used moral dilemma teaching concurred in its ability to develop children's thinking ability positively. Perhaps most interestingly, given the results from the intervention study presented in the previous chapter, there was a general perception that the *Analects* were best used with older pupils, and moral dilemmas with younger pupils. Given the paucity of systematic use of either type of lesson content, it seems unlikely that this perception was based on actual experience; it is more probable that it is a function of the apparent complexity of the material. Nevertheless, it does suggest that any graduated programme of dialogic teaching that commenced with moral dilemmas and then moved on to the *Analects* as pupils get older would to this extent sit well with teachers' existing conceptions.

Sixthly, and more problematically, it was plain that conceptions and experiences of dialogic teaching were very limited. The teachers typically defined dialogic teaching

as interactive discussion between a teacher and pupils in the classroom. They agreed that there might be benefits for children's thinking from dialogic teaching using group work. However, most merely used it in whole class discussions, or as part of individual talks about deviant behaviour with some specific pupils. There was a general consensus – as in the pilot study – that the tight and stressful curriculum, limited class time, and large class size all imposed serious constraints on the use of group work. As a result, there were few teachers would apply dialogic teaching within group work lessons to develop children's thinking and talking, though those who did strongly agreed that it could enhance pupils' reasoning. Therefore, better ways of providing teachers with direct experience of how to use group discussion in class, perhaps with the more responsive older students and otherwise using age-appropriate materials, might provide the key to practical progress.



## Chapter 10: Discussion

### 10.1 Introduction

The objective of this chapter is to discuss the findings reported in the preceding chapters, addressing the research questions identified in Chapter 1 and the theoretical implications of the whole study. It also considers the implications of the results for developing children's critical thinking and moral reasoning by applying the lessons of the *Analects of Confucius* and Western philosophical moral dilemma stories. Possible research restrictions are indicated, and suggestions are made for potential extension to further future research.

### 10.2 General discussion

The research addressed five questions, in the hope that the answers would assist in specifying the principles around which elementary dialogic teaching to develop children's critical thinking and moral reasoning by means of using the *Analects of Confucius* might be organised.

The first question was how effective dialogic teaching is in improving Taiwanese primary school children's critical thinking in the context of moral reasoning. Bloom (1956) argues that to develop critical thinking skills is to obtain knowledge and understand others. Mercer (1995) contends that an alternative conception of the study of the development of knowledge and understanding is one which offers a more unequivocal identification of the role of language as a method for building this up. According to Mercer's work on exploratory talk (1995, 1996, 2000, 2008), since communication skills are a requirement for effective group work, the latter depends on preparing children to engage in authentically exploratory talk in classrooms, and

children should therefore be supported to build up the skills fundamental for such collaboration, in order that substantial talk can, in his terms, be utilised as a ‘social mode of thinking’. If we adhere to the argument that knowledge and meaning fundamentally intervene in the social processes of language as claimed by Mercer (1996), whether or not participation among peers is consequential in promoting effective learning is founded on the quality of discourse which takes place throughout a collaborative group work activity (Reznitskaya, *et. al.*, 2009). In the present research, in order to examine children’s critical thinking in the context of moral reasoning by means of dialogic teaching, the focus fell on eight key dialogue elements identified in previous research: proposing ideas, disagreeing, agreeing, explaining, elaborating, referring back, resolving, and questioning (Howe & Tolmie, 2003; Howe *et al.*, 1995, 2000; Tolmie, Howe, Mackenzie, & Greer, 1993). According to Mercer (1995, 1996), three forms of thinking and talking can be distinguished, these being ‘cumulative talk’, ‘disputational talk’, and ‘exploratory talk’. These provide an overarching framework for considering the pattern of occurrence of the more specific dialogic categories and how far these evidence progress as a result of dialogic teaching.

Based on these theories, looking back at the results of the main study, as far as the post-test essays were concerned, the youngest children in the intervention classes performed better on the use of agreements, elaborations, and resolutions, but with the pupils in the moral dilemma intervention showing best progression. Among the 9-10 year old children, those in the Analects intervention class showed distinctive improvement in the employment of explanations and resolutions, though primarily only where the essay task was similar to those used in the intervention lessons. Among the 11-12 year old pupils, those in the Analects intervention class again did

better, though only in the exploitation of questions. Despite the relatively restricted impact outside of the dialogic lessons themselves, it can nevertheless be argued that these groups showed signs of their thinking having shifted progressively toward the elements associated with exploratory talk, and that the children who had received dialogic teaching generally improved in their thinking ability compared with the controls.

This pattern was notably more evident in the dialogues within the lessons, however, where all three age groups showed increasing differentiation of the forms of dialogue they employed, and the oldest age group in particular made use of the full range of discussion moves by the conclusion of the intervention, with minimal teacher support. As noted in Chapter 8.4, the only limitation was the lack of increase in coordination of ideas that would have been marked by use of references back and resolutions; disagreements, agreements, explanations, elaborations and questions all showed general increases indicative of genuine exploration of ideas via mutual interrogation and clarification. Here too, though, there were signs that the progress made was greater in the moral dilemma lessons for the youngest age group, whereas in the older two age groups, the *Analects* intervention appeared on balance to be more effective.

This pattern of differentiated outcomes is relevant to the second question addressed by the research, which was whether dialogic lessons using the *Analects* and moral dilemmas differ in their effectiveness. Lipman (1977) aimed to apply philosophy effectively within the curriculum to enhance children's thinking, and intended to integrate the child's social skills within this activity, so as to use dialogue as a procedure to enlarge thinking (Fisher, 2005). From the PI perspective, philosophical writing can be helpful material for structuring a community of enquiry that enables

children to talk and think critically and collaboratively in the classroom. (Fisher, 2003a,b; Lipman, 2003; Trickey and Topping, 2004). Fisher (2008a) claims that we need the ability of critical thinking to help us to shape intelligent moral judgment on public issues, and so contribute democratically to the moral principles and values of society. Suitable activities can be used across the curriculum, but particularly in the context of social and moral education, where the philosophical importance of prompts and questions is significant (McGuinness, 1999).

This research applied materials with different cultural origins in the two types of lessons to implement dialogic teaching. In terms of CR pedagogy (Reznitskaya, *et al.*, 2009), the *Analects of Confucius* contains Chinese classic philosophical analogies and aphorisms, and the pupils who encountered these materials discussed the meaning behind the selected brief extracts. *Stories for Thinking* (Fisher, 1995) consists of moral dilemma stories that have a more Western currency. The pupils who encountered material drawn from this discussed the big question associated with each story, such as friendship, loyalty, truth, fairness, and so on. As already noted, the results revealed that these two types of material effectively worked to develop children's thinking and talking in different ways according to their age group. The youngest age group showed less evidence of gain in questions in the Analect lessons than they did in the moral dilemma lessons, and they also produced fewer agreements and explanations during those lessons. For the older two age groups, the two interventions were much more comparable in these respects, and the transfer to the essay writing task was clearly greater for the Analects material, even if the impact was limited to the more closely related piece of writing.

There were of course variations in this overall pattern. Interestingly, the children who

engaged in the moral dilemma lessons used more explanations from the outset, but these fluctuated extensively from one lesson to another. This might have been a function of the specific stories that were used, except there is no reason to suppose these exhibited more variation than the Analects, where use of explanations increased much more smoothly and systematically. Thus, it may be that whilst the moral dilemma stories elicited the skill of explanation to a greater extent, they also did so in rather less predictable fashion, for these participants at least.

The third question addressed by the research was whether or not any effects relating to questions one and two vary according to age group, and the age group variations in the relative effectiveness of the Analects and moral dilemma lessons are of course part of the answer to this. There were more general age group variations in the effects of dialogic teaching, however. In the post-test exercise, for example, the youngest age group used more propositions than the older children, whereas the older children used more resolutions and questions, particularly those in the oldest age group. Similarly, in the intervention lessons, there were significant differences between age groups in the use of agreements, explanations, references back, and questions. The older children made more use of agreements and questions, especially in the Analects lessons, and the oldest age group in the Analects intervention made the greatest use of references back. For explanations, while there was no overall age difference, the youngest age group made substantially less use of explanations than the older two groups in the Analects lessons. The general picture, unsurprisingly, is that younger children are less sophisticated in their use of the dialogue elements associated with exploratory talk, though the more positive outcomes for the moral dilemma lessons suggests that this is to some extent a function of the materials that are employed.

This last result fits in with the attack of Emler *et al.* (1983), Turiel (1993), Lamb, 1988, and Anderson (1980) on Kohlberg's argument that conventional and post-conventional moral reasoning is associated with the distinction between intuitive and critical thinking capabilities (Baron, 1998), and that young children need to learn intuitive rules without reason. The case that older children have to justify their intuitions corresponds with ideas of PI about the use of Socratic discussions and moral philosophy (Lipman, 1988). However, the supposition that young children are not ready for critical thinking is excessively negative, and is primarily founded on the mistaken claim (e.g., Kohlberg, 1970) that cognitive development constrains moral understanding.

The fourth question addressed by the research was whether or not there was any evidence to support the argument that the Analects represent more culturally embedded materials for Taiwanese children. The picture that emerged on this point was more complex than had been anticipated. In general, parents indicated that they made more use of moral dilemma style narratives within the home than they did the Analects or similar forms of aphorism, and this indicates that the Analects are perhaps less embedded than had been supposed. Moreover, given that the teachers interviewed for the main study considered narratives of this kind to be strongly associated with Western influence, it might be taken that their use within the home reflects a greater domestic cultural shift – perhaps due to the influence of television and other media – than is apparent in school. The better performance of the youngest children with the moral dilemma materials would be in line with this.

Nevertheless, according to the results of the parents' survey, when parents were more educated and had older children, they were more likely to talk about Chinese proverbs

with children at home. Consistent with this, the outcomes from the post-test and the dialogic intervention illustrated that the older children participating in the *Analects* lessons showed better improvement in their argumentative skills. This association with the parents' usage suggests that the *Analects* might provide a better cultural resource for improving critical thinking once children have achieved an assured level of understanding. It might also reflect enculturation via the school system in the more traditional modes of Chinese thinking: although the teachers made limited use of the *Analects* themselves in their teaching, there were clear signs of greater receptivity to that tradition than to the Western modes represented by *Stories for Thinking* – again perhaps because the latter have become embedded in a *popular* culture to which they are more resistant.

These findings echo some of the points discussed in Chapter 2. As Wang (2003) claims, Confucian theories embody the importance accorded to education by society, framing thinking and learning as a moral commitment and studying hard as a responsibility to the family. Lee (1996) states that contemporary accounts of the cultural outlook of Chinese learners emphasize the fact that a number of Confucian thoughts have continuing recognition. Reasonableness may be the best word to illustrate how Confucius advised people to interact. Confucianism aims at defining how a person has to be to live a moral life. This morality ascends above all other features of the human spirit, and is only able to be achieved by education and cultural consciousness (Smith, 1991). Confucius' educational thought is found in the *Analects*, which describes the aim of education as the individual development of one's own self. The contents of the *Analects* are not only concerned with moral improvement, therefore, but also with the positive connotations of learning and thinking (Lee, 2000). Given these points, it would be unsurprising if the *Analects* constituted more

culturally implanted materials for Taiwanese children *within the school context*, with all the effects observed to follow from this. What remains unclear is how far the data presented here capture an ongoing process within which schools continue to act as the point of contact between Taiwanese children and their Chinese cultural heritage; or the last instances of an older pattern which is giving way before a wider cultural shift towards more Western values and perceptions.

The answer to this might lie with the actions of teachers themselves, and how far they identify ways of framing more traditional values which still have a resonance and an interest for children. The fifth question was the reasons teachers offer for the poor take-up of dialogic teaching in Taiwanese schools. As a result of Westernization and globalization, MOE (2000) started to reform the national curriculum with the Nine-Year integrated curriculum, introduced in 2001. This was intended to help children develop their potential as well as enhance their ability for adapting, thinking, and making necessary efforts to advance their living environment. As part of this, the Taiwanese government therefore supported teachers' implementation of dialogic teaching to develop children's thinking ability. Also, the integration of materials involving diverse learning fields was strongly recommended as a means of progressing the effectiveness of both teaching and learning. The reorganization required important changes in both content and pedagogy. Nevertheless, most Taiwanese teachers are still restricted by the conventional cultural myths of the teacher-centred and examination-driven tradition (Yang, Huang, & Aldridge, 2002) — trapped as it were in the wrong elements of Confucian tradition. As a result, dialogic teaching has hardly ever been used to enhance pupils' thinking by primary teachers in Taiwan (Yang, 2008).



These points are reflected in many elements of the teachers' interviews. Most teachers revealed positive agreement with the benefits of dialogic teaching for developing children's thinking, but rarely used it in their teaching. Four points were made which reveal why. First, dialogic teaching is most often used to instruct pupils' moral behaviours with particular deviant pupils only. Second, it was argued that the integrated curriculum is various, complex, and stressful, and constrains pedagogy in such a way that it has been fairly difficult to carry out discussion in class. Third, large class sizes and time limitations mean that it is hard to implement dialogic teaching in the form of group work. Fourth, many Taiwanese students are unused to discussing and exchanging one another's ideas in group work. As a result, some teachers applied dialogic teaching via whole class discussion, but only a few limited students would express their viewpoints frankly and publicly, leaving exchanges more like the conventional type of IRF.

The final question was whether teachers perceive the *Analects* as offering a potentially more useful tool for dialogic teaching. According to the analyses from the teachers' interviews, even if the *Analects of Confucius* is a required supplementary reading for pupils in the school, the teachers of older children rarely applied it in their teaching and merely occasionally used some sentences from the *Analects* as quotations in Chinese lessons. However, the teachers of younger children did appear to implement such reading more regularly and to apply the content to real examples and stories to help them make sense to young pupils. However, although these teachers agreed with the idea that the *Analects* could be usefully applied in dialogic teaching, they had never carried it out. They argued consistently that the content in the *Analects* can be integrated to present situations for discussion and judgment. Because of the essential moral principles in the *Analects*, based on the rationale of ancient

society, these can be used to frame controversial issues and to reflect on current circumstances within extended discussion, helping children to see that the sentences in the *Analects* are still appropriate to contemporary life. At the same time, they also thought that they may only be suitable for being used with older children since young children lack the necessary cognitive abilities and literacy. Given that Confucian concepts such as *li* • • (the proprieties or watching ritual rites), *ren* • • (human-benevolence or respected conduct), *junzi* • • • (gentleman), and *yi* • • (justice, appropriateness, or morality) are subtle and may often be new to students, there may be some truth in this. However, it does mean that the teachers who sensed that the *Analects* might provide a potentially beneficial tool for dialogic teaching were not in fact the ones working with the age groups with whom they thought – and the data indicate – they would be most effectively used.

There remains a substantial gap, therefore, and offering teachers of the right age groups direct experience of how to apply group discussion in class using the most effective materials would seem to be the only way forward. It is hoped that the present research might go some way towards encouraging others to explore this possibility.

### 10.3 Limitations of the research

There were certain key ways in which the research could have been strengthened, particularly with regard to data linkage. In response to the need to preserve anonymity, the researcher did not keep records that would have made it possible to connect data from individual group conversations with pupils' language scores, post-test essays or parents' survey responses. Thus it was not possible to case-link parental behaviours or other background variables to the analysis of group dialogue, its change over time, or to individual performance in the post-tests. It cannot be

presumed of course that such analyses would have provided any greater insight than the more structurally based examination presented above. However, the potentially greater depth of detail that full case linkage would have enabled makes it a strong recommendation for any future research in this area, even if this does present greater challenges to data protection and confidentiality.

There were other weaknesses too. Because of the lack of case-linkage, the responses of the parents who participated in the survey were not used to match pupils individually across the three treatment conditions in each age group, which may potentially have impacted on the observed outcomes. The late availability of children's language tests scores meant that matching was not possible on this basis either, with the result that there were in fact some differences between conditions in the youngest and middle age groups. Here at least, though, it was possible to see whether this had an impact on the data, and in fact it appeared that this was not the case. Because of school restrictions, the dialogic interventions could only be implemented once a week over a 12 week period. Time limitations therefore meant that exploration of the longer-term effectiveness of the interventions in developing children's critical thinking was not possible, something that might have been important in terms of the observed transfer to other tasks. Also, the conversation in the control classes was not observed or recorded. Thus, it was impossible to ascertain whether or not some aspects of the dialogical improvement seen in the intervention groups were also present in the control groups.

The author's role as teacher-researcher meant that she was familiar with working as a teacher; thus, rather than trying to implement the interventions as an inexperienced researcher, she was able to act in a manner more consistent with the children's own

class teachers, with the exception of using the intervention material. However, this did also mean that her attention was divided between the two roles, and she could not be completely unbiased. She had hypothesised that the Analects would be more effective than the Stories, and was in a position to steer things so that this hypothesis was confirmed. However, as Wood (1986) notes, it is actually quite difficult for tutors to operate a decided strategy for scaffolding children's activity, since there is always a need to respond to the behaviour of the children themselves. If there was any bias in the observed outcomes, it was subtle, since the apparent advantages of the Analects were complex in nature, and on the whole, were not things that could have been deliberately managed. Also, having designed both types of intervention material, and attempted as part of this to make them comparable, there was inevitably a similar level of investment in trying to ensure that both operated as effectively as possible.

#### **10.4 Future research**

As an essentially exploratory piece of research, at least in a Taiwanese context, the main study achieved significant outcomes. Two relatively full programmes of dialogic teaching based on group work activities were developed and implemented with reasonably large cohorts and suitable control comparisons. The data obtained from the interventions and the post-test exercise provided a clear and consistent picture on the relative impact of the two forms of intervention at different ages, and the background data from the parents' survey and the teachers' interviews assisted in useful fashion with the interpretation of effects.

As acknowledged, though, there were limitations in the design of the study, and a number of points that need to be dealt with in follow-up research. The key priorities would appear to be increase the scale of research in this area and/or the depth of detail

of the data collected.

As far as scale is concerned, there are two main points for consideration. The first is the potential benefits that might come from expanding the research into a comparative study involving implementation across several primary schools in diverse regions, such as urban, rural, and mountain, to examine differences among them. This would serve to establish how far the effects reported here are actually representative, and might clarify further the nature of the effects of background culture, given that rural regions are typically more conservative culturally. Equally importantly, an extension of this kind might go further towards establishing a portable form of intervention programme that could serve to provide teachers with hands-on experience of the kind that may be necessary to persuade them of the practical potential of group-based dialogic teaching. Moreover, if the results produced from an initial wave of interventions continued to be positive across a range of settings and contexts, this in itself may have a wider impact with regard to both the perceived value and the practicality of using dialogic teaching of this kind.

The second type of scale change that might be considered is extending the intervention to a greater frequency of lessons per week or a longer time scale. Work by Howe et al. (2007) on a group work intervention in primary science stipulated that class teachers should devote at least two hours per week to group work activity over a two month period, and this appeared to be sufficient to produce real gains in pupils' group work skills as well as robust gains in performance on other tasks (see also Tolmie, Topping, Christie, Donaldson, Howe, Jessiman, Livingston & Thurston, 2010). However, this research was conducted in a UK context, where pupils are more used to peer discussion; in Taiwan discursive skills and transfer effects might take

longer to establish because of the greater unfamiliarity. Demonstrating good transfer effects might be especially important, given some of the views expressed in the teachers' interviews.

With regard to depth of detail, there is plainly a need to carry out work where proper case linkage is made between parental and family characteristics, children's individual contributions to group discussion, and subsequent transfer effects in learning. Although there is research demonstrating the importance of home environments for school progression (e.g., Sammons, Sylva, Melhuish, Siraj-Blastchford, Taggart, Grabbe & Barreau, 2007), there has been almost no work anywhere on how parental and family influences carry through to contributions to group and class discussion. If the idea of exploring issues of cultural familiarity and resonance is to be taken seriously, this is an important further step.

#### *10.4.1 Promoting dialogic teaching in primary and secondary schools in Taiwan*

According to the teachers' interviews, dialogic teaching is seen as somewhat beneficial for developing children's thinking. Some of the teachers occasionally made time for a whole class discussion, which could help the children to reflect on what they had learned from the class and explore in-depth thinking. However, there was little real enthusiasm for it, and class discussion was constrained by limited class time and a tight syllabus, so that interactive dialogue teaching could not be applied sufficiently frequently to be entirely effective – and to be recognised as actually being so. In fact, according to the results of this study, dialogic teaching does work for children of all ages in Taiwanese primary schools, though it might require teachers to apply more imaginative and comprehensive topics as moral dilemma stories to motivate younger children to think and talk in ways compatible with their more

limited literacy and comprehension. In contrast, older children may need more culturally resonant materials to stimulate their thoughts and discussion.

The real issue, however, is teachers in Taiwan have made little effort to implement dialogic teaching in the curriculum, and it is this that needs to be addressed. At a practical level, it may help to identify specific strategies that teachers can employ. Based on the outcomes of this study, both primary and secondary school teachers could use three interlinked strategies to implement this approach in the syllabus:

- 1) Since class time is limited, teachers may spend the final 10 minutes on a classroom discussion to reflect on the lesson topics.
- 2) In large classes of 30 pupils, these can be divided into small groups. The teachers can design a worksheet with one big question related to the lesson topic, and small groups of pupils can discuss it and make comments and write them on the sheet. Meanwhile, the teacher should walk around every group and provide the appropriate support to motivate more in-depth thought and discussion.
- 3) A spokesperson from one to two groups should be invited to present their group's ideas openly to encourage further whole class discussion, with this role being alternated lesson to lesson between pupils.

The development of dialogic teaching cannot only depend on the efforts of teachers, however. They need to be encouraged to introduce and build on the strategies identified above, and school principals and the MOE need to support this process. The MOE should provide knowledge and guidance on practical methods to implement dialogic teaching in the national curriculum to all principals and teachers, such as making a national dialogic handbook and providing regular training courses. It should also make attending the training programmes regularly an official and strict

requirement, making it plain that they see this as a serious priority. Moreover, principals should be instructed how to manage, promote, supervise, and support a dialogic approach in their schools. Also, they need to clarify the situations encountered by teachers in dialogic teaching, and support and assist them with any problems in the instructive process. Schools should create a network whereby teachers of all grades and all levels can meet monthly to share experiences and ideas. Additionally, the MOE and school principals should build bridges to resolve problems, and collectively evaluate the validity and effectiveness of implementing dialogic teaching in the national curriculum.

The introduction of dialogic teaching in this way would bring clear educational benefits to both primary and secondary schools: 1) the teaching approach would be more active and lively to motivate children's learning; 2) the traditional one-way instruction would give way to interactive connection between teachers and students, and peers and peers; 3) pupils' thinking and reasoning would be developed more critically and creatively within the framework of the national curriculum; 4) a wider cultural perception of the role of education in promoting this kind of active engagement would help develop pupils' global perspectives and prepare them for responsible world citizenship in modern Taiwan. The key point, perhaps, is that once some of these benefits begin to be directly experienced, the process of building dialogic teaching more naturally into school life would become a self-sustaining one. What is needed at this point in time is clear leadership towards making a start.



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# Appendix

## Appendix □: Informed consent letter

01 October 2008

Primary School Principal

Taoyuan / Shanghai Public Primary School

**Re: The project of the development of the child's logic in the primary school education**

Dear Principal,

I am a doctoral candidate from Institute of Education, University of London doing dissertation research. The purpose of my proposed study is to develop children's critical thinking from the Western concepts and the traditional Confucianism in the primary school education in Taiwan. An in-depth analysis of the development of the children's reasoning as interpreted and implemented in the regular curriculum and the added Analects of Confucius will be accepted. In such reverence, the letter which is sent to you will be looking for your agreement of doing the research within your school which including teachers and children.

The study will continue for one semester (about 13weeks). As a part of the project I would like consent to collect data from you and your students in three ways including interview, class observation, and task-based. It will be appreciative if you could participate in my research. All information you offered will be employed merely for the research intentions, and your name and your students' name will be anonymised. If you agree to take part in this research, please sign the form below and return this letter back to me. Participation in this project is thoroughly voluntary and you may drop out immediately. If you would like additional information, please feel free to contact me by email, which is [blissfulalice@hotmail.com](mailto:blissfulalice@hotmail.com). Thank you for responding to this appeal.

Signature: \_\_\_\_\_

Sincerely,

Peng-Fei (Alice) Chen

PhD in Psychology and Human Development

Institute of Education, University of London

## (Pilot study)

### Appendix II : Sample of classroom talk in the pilot study

#### Text of lesson two by group A

#### The target sentences of *the Analects of Confucius*:

1. . . . .

Zi yue: “bu ren zhe, bu ke yi jiu chu chu yue, bu ke yi chang chu le, ren zhe an ren, zi zhe li ren.”

Confucius said: “ A man without virtue cannot endure adversity nor enjoy prosperity for long. A man of virtue rests content in virtue: a man of wisdom knows the way to gain the benefits of virtue.”

2. . . . .

Zi yue: “fu ren zhe, ji yu lie r li ren, ji yu da er da ren.”

Confucius said: “A benevolent person is one who helps others to be established even as he establishes himself; who helps other to achieve even as he strives towards personal achievements.”

**T: teacher S: student**

(Group discussion - group 5)

1. T: . . . . .

Are you discussing?

2. S: . . . :: .

Ye::s

3. T: . . . . .

Which sentence are you discussing?

T S

q

c

q + c

4. S: ..... e .....  
 .....  
 We are discussing that Zi yue: [fu ren zhe, ji yu li er li ren,  
 ji yu da er da ren.]
5. T: ..... q + c  
 What is the meaning of this sentence?
6. S1: ..... pr + c  
 A benevolent person must be establishment and achievement.
7. T: ..... q + c  
 Does everyone agree with this view?  
 .....  
 How about you? q  
 .....  
 Do you think so? q
8. S2: ..... pr + ex .....  
 ..... + c .....  
 .....  
 I think a benevolent person would help people from  
 the beginning to the end toward the goal.
9. T: ..... q  
 How about you?
10. (0.5)
11. S3: ..... ag + c  
 I agree with him.
12. T: ..... q + c .....  
 ..... pr



Why do you agree with him?

The other peer's proposition is also good.

13. (0.6)

14. T: . . . . .

q

How about you?

15. S4: . . . . .

ag + c

I think he is right.

16. T: . . . . . q + c . . .

. . . . . ; . . . . . pr

Why do you think the second peer's thought is right?

But, I think the other idea is good, too.

17. (1.0)

18. S3: . . . . . pr + ex . . . . .

Because a person can help himself and support other r + c

people, it is great.

19. T: . . . . .

c

Ok, good.

(Class discussion)

20. T: . . . . . pr + c

. . . . .

. . . . .

Ok, good. Every group was diligent with discussion.

Right now, we are going to invite the representative

from each team to present your consensus.

21. (0.8)

22. T: . . . . .

c

Ok, the representative of group one.

23. G1: . . . . . pr+el . . . . .

. . . . . + c . . . . .

. . . . .

. . . . .

. . . . .

. . . . .

We discussed the first sentence, Zi yue: [bu ren zhe,

bu ke yi jiu chu yue, bu ke yi chang chu le. Ren zhe an ren,

zi zhe li ren.] We think the answer is the second choice,

Confucius said: "the person without virtue cannot endure

adversity nor enjoy prosperity for long. A man of virtue

rests content in virtue: a man of wisdom knows the way to

gain the benefits of virtue."

24. T: . . . . . q + c . . . . .

Good. But why do you think this is the proper explanation?

25. G1: . . :: .

c

Beau::se

26. (0.8)

27. G1: . . . . . pr+ex . . . . .

. . . . .

c + r

Because, in the picture, a man lives very poor place,

he keeps crying, and he doesn't want to live there.

28. T: . . . . .

q + c

So, what do you think this kind of man?

29. G1: ..... pr + c  
He is a petty man. + r
30. T: ..... c  
Ok, good, the next group.
31. (0.3)
32. G2: ..... pr + el  
..... + c  
.....  
.....  
.....  
.....  
We are presenting that Zi yue: [bu ren zhe, bu ke yi jiu chu yue,  
bu ke yi chang chu le. Ren zhe an ren, zi zhe li ren.]  
We think the answer is the second one. Confucius said:  
“the person without virtue cannot endure adversity nor  
enjoy prosperity for long. A man of virtue rests content  
in virtue: a man of wisdom knows the way to gain the  
benefits of virtue.”
33. T: ..... q + c  
Good. But, why do you think the meaning is this choice?
34. G2: ..... pr + ex  
..... + c + r  
Because, in the picture, this man thinks the other man  
doesn't have any food to eat. He needs help. So, he is  
crying for the poor man.
35. (0.2)
36. T: ..... q

Anything else?

37. G2: ..... pr+ ex

So, he is a good man. It matches the second answer. + c+ r

38. T: ..... c ..... .

Good, thanks for this student, next group.

39. G3: ..... pr+ el ..... .

..... + c ..... .

.....

.....

We are presenting, Zi yue: [fue ren zhe, ji yu li er li ren,

ji yu da er da ren.] Confucius said: "A benevolent person is one

who helps others to be established even as he establishes himself;

who helps other to achieve even as he strives towards

personal achievements."

40. T: ..... q+ c

Why do you think the meaning is this choice?

41. G3: ..... pr+ ex ..... .

..... + c+ r ..... .

.....

Because the person in the picture seems treating everyone

very well, everyone likes him very much. That is why I

chose this one.

42. T: ..... c

Ok, good, next group.

43. G4: ..... pr+ el ..... .

..... + c ..... .

.....

We are discussing the second sentence. Zi yue: [fue ren zhe, ji yu li er li ren, ji yu da er da ren.] Confucius said: “a benevolent person must be established and towards achievement.”

44. T: ..... q + c

Why do you think the meaning is this one?

45. G4: ..... pr+ ex .....  
..... + c+ r

Because the man in the middle of the picture seems really good ,everyone thinks he is a great man. So, everyone cries since they appreciate and admire him.

46. T: ..... c

Good, ok, the last group.

47. G5: ..... pr+ el .....  
..... +c .....  
.....  
.....

We are presenting, Zi yue: [fue ren zhe, ji yu li er li ren, ji yu da er da ren.] The answer is the second one. Confucius said: a benevolent person is one who helps others to be established even as he establishes himself; who helps other to achieve even as he strives towards personal achievement.

48. T: ..... q + c

Why?

49. G5: . . . . . ex + rb . . . . .

. . . . .

c + r

Because an old man in the picture is very great, everyone  
appreciates him. Then they cry for thanks.

50. T: . . . . . c

Good, very good, everyone group is great.

### Text of lesson two by group B

#### The target sentences of the Analects of Confucius:

1. . . . .

Zi you wen xiao: Zi yue: “jin zhi xiao zhe, shi wei neng yang. Zhi yu quan ma, jie neng you  
yuan. Bu jing, he yi bie hu?”

Zi You consulted Confucius about filial piety. Confucius said: “These days, meeting the  
physical needs of parents is considered filial piety. But even dogs and horses are likewise  
cared for. What difference is there if one does not show his parents respect?”

2. . . . .

. . . . .

Zi gong wen yue: “you yi yan er ke yi zhong shen xing zhi zhe hu?” Zi yue: “qi shu hu, ji suo  
bu yu, wu shi yu ren.”

Zi Gong asked: “Is there a single word that one can follow as a life principle?” Confucius:  
“Yes! It is perhaps ‘consideration’. Do not do unto others what you do not want others to do  
unto you.”

3. . . . .

Huo yue: “yi de bao yuan, he ru?” Zi yue: “he yi bao de? Yi zhi bao yuan, yi de bao de.”

Someone asked Confucius: “What do you think if one repays hatred with kindness?”

Confucius said: “What then do you return kindness with? Repay hatred with justice, and repay

kindness with kindness.”

4. . . . .

Zi yue: “qiao yan ling se, xian yi ren.”

Confucius said: “Those with flattering lips and who pretend to be kind do not possess benevolence.”

**T: teacher S: students**

**T S**

(Group dialogue: group 3)

1. T: . . . . .

q

Which sentence are you discussing?

2. S1: . . . . .

. . . . .

Huo yue: “yi de bao yuan, he ru?” Zi yue: “he yi bao de?”

Yi zhi bao yuan, yi de bao de.”

3. T: . . . . .

q + c

What does it mean?

4. S1: . . . . . •pr+ex• . . . . .

Someone is fighting. The aggressive one keeps

+ c

complaining, he does not let others response.

5. T: . . . . .

q + c

What do you think?

6. S2:     . . . . . •ag+pr• . . . . .

Um, he keeps complaining, this behaviour is not moral.

+ c

7. T: . . . . .

q + c

Then?

8. (0.3)

9. S3: . . . . . •pr+ex• . . . . .

People should have moral, and you may have many honest friends. + c

10. T: . . . . . q + c  
Then?

11. S4: . . . . . ag + c  
I think their statements are reasonable.

12. S2: . . . . . c  
These accounts are the meaning of this target sentence.

(Class conversation)

13. T: . . . . . q + c  
Ok, have you finished discussion?

14. Ss: . . . . . c  
O::K.

15. T: . . . . . pr + c . . . . .  
. . . . .  
Good, I am going to invite the representative of each group to present the conclusion from your discussion.

16. T: . . . . . c  
Ok, we start from the first group.

17. G1: . . . . . pr + c . . . . .  
. . . . . + c . . . . .  
. . . . .  
. . . . .  
“Zi you wen xiao. Zi yue: jin zhi xiao zhe , shi wei neng yang. Zhi yu quan ma, jie neng you yuang. bu jing, he yi bie hu?” Today, Confucius has many filial students to



serve him. He requires them to care for dogs and horses.

Then they are gathered for care, and respect them.

18. T: . . . . . c . . . . .

Good, thanks for group one. Next, group two.

19. G2: . . . . . pr +el . . . . .

. . . . . + c . . . . .

. . . . .

. . . . .

. . . . .

“Zi gong wen yue: you yi yan er ke yi zhong shen xing

zhi zhe hu,? Zi yue: qi shu hu! Ji suo bu yu, wu shi yu

ren.” A man picked up a smelly earthworm. Shortly,

many people came. This man used the smelly

earthworm to trick people. Then, everyone was scared

and ran away. Finally, a cat came, and ate this smelly

earthworm.

20. T: . . . . . c . . . . .

Good, thanks for group two. Next, group three.

21. G3: . . . . . pr +el . . . . .

. . . . . + c . . . . .

. . . . .

. . . . .

“Huo yue: yi de bao yuan, he ru? Zi yue, he yi bao de?

Yi zhi bao yuan, yi de bao de.” Two people got fight, the

winner one keeps complaining; the loser one does not

say anything. Confucius said that this behaviour does not

have morals.

22. T: ..... c .....

Good, thanks for group three. Next, group four.

23. G4: ..... pr +el .....  
 ..... + c .....  
 .....

“Zi yue: qiao yan ling se, xian yi ren.” Confucius said:

a man flatters the other man and requires him to do

something. Also he uses money to demand him doing

bad things. Do not promise him.

24. T: ..... c

Good, thanks for group, next group.

25. G5: ..... pr +el .....  
 ..... + c .....

“Zi yue: qiao yan ling se, xian yi ren.” Confucius said that

he can speak well, and his clothes is very colourful. He is a

moral man.

26. T: ..... c .....

Good, thanks for group. Next, the final group.

27. G6: ..... pr +el .....  
 ..... + c .....  
 .....

“Huo yue: yi de bao yuan, he ru? Zi yue, he yi bao de?

Yi zhi bao yuan, yi de bao de.” Two people are fighting.

One of them keeps complaining. So, someone said that

they do not have morality.

28. T: . . . . .

Good, thanks for group six.

### Text of lesson two by group C

#### The target sentences of the Analects of Confucius:

1. . . . .

Zi yue: "Jun zi cheng ren zhi mei, bu cheng ren zhi e. Xiao ren fan shi!"

Confucius said: "A gentleman helps others to succeed and never causes them to fail. A petty man does the opposite."

2. . . . .

Zi yue: "Jun zi yi yi wei zhi, li yi xing zhi, xun yi chu zhi, xin yi cheng zhi. Jun zi zai!"

Confucius said: "When one abides by righteousness is a principle of life adheres to the rites, speaks with modesty and is trustworthy in all his ways, he may be regarded as a true gentleman."

3. . . . .

Zi yue: "San jun ke duo shuai ye, pi fu bu ke duo zhi ye."

Confucius said: "The army may lose its commander, but a man cannot lose his aspirations."

4. . . . .

Zi yue: "Zhi zhe bu huo, ren zhe bu you, yong zhe bu ju."

Confucius said: "The wise is never confused. The benevolent is never worried. The courageous is never afraid"

T: teachers S: students

T S

(Group discussion – group 6)

SI: . . . . .

It is difficult to explain this sentence.

c

S2: . . . . .

Let's start from a photo.

c

(0.5)

S1: . . . . . pr + c . . . . .

. . . . .

According to the photo, people greet one another.

(0.3)

S2: . . . . . ag + rb

Um, greeting. They politely greet each other. + c + ex

S3: . . . . .

. . . . . dg + pr . . . . .

. . . . . ex + c . . . . .

I think it is likely wrong. It should be that Confucius said a + el

gentleman thinks a man who has righteousness is a real

gentleman, but a real gentleman always should acts politely,

and if he does something wrong, he would admit it.

S4: . . . . . ag + pr

Yes, he does not think it is other people's fault. + ex + c

S5: . ㄣ ㄣ . . . . . q + c

How about 'xin'?

S3: . ㄣ c

Umm:::

S2: . . . . . ㄣ . . . ㄣ . . .

It does not probably mean 'believe'. pr + c

S5: . . . . .

- So, what is the correct meaning? q + c
- (1)
- S1: ..... rb + c
- A real gentleman would act politely.
- S3: ..... = ..... ag+ rb
- Um, he cannot just rely on saying without doing= +c+pr
- S2: ..... rb + c
- =If he does something wrong, he should be honest
- S1: ..... = ag + c
- S2: ..... = ..... c
- =Then...I don't know.
- S4: ..... rb + c
- This is a real gentleman.
- S3: ..... q + c
- How about 'xin yi cheng zhi'?
- S5: ..... pr+ ex
- I believe he may be successful. + c+ r
- S2: ..... ag + c
- Yes, that is right.
- (Class conversation)
- T: ..... q
- Has every team finished the discussion?
- S: ..... c
- Yes.
- T: ..... q + c
- Ok, which team would present firstly?

(0.2)

T: ..... ɸr+ c

Ok, let us start from the first team.

G2: ..... ɸr+ el ..... .

..... ɸ+ e ..... .

..... .

..... .

We present that “Zi yue: jun zi chen ren zhi me,

bu cheng ren zhi e, xiao ren fan shi.” Confucius

said : when gentlemen grow up, some may become

moral men, but some may become immoral men;

petty men are the same.

T: ..... ɸ+ e ..... .

Ok, very good. Next, the second team.

Which sentence are you going to present?

G2: ..... ɸr+ el ..... .

..... ɸ+ e ..... .

..... .

..... .

..... .

Confucius said: “Zi yue: jun zi yi wei zhi, li yi xing zhi, xun

yi chu zhi, xin yi cheng zhi. Jun zi zai.” ‘Jun zi yi yi wei zhi’

is that gentlemen were born with innate righteousness;

‘li yi xing zhi’ is that gentlemen do things based on manner;

‘xun yi chu zhi’ is that gentlemen would not show off

to other people; ‘xin yi cheng zhi’ is to be trustable.

These are all gentlemen's behaviours.

T: . . . . . q + e . . . . .

. ; . . . . .

Ok, very good, the third team. Oh, the fourth team.

G4: . . . . . pr+ el . . . . .

. . . . . + e . . . . .

. . . . .

. . . . .

We discussed "Zi yue: xhi zhe bu huo, ren zhe bu you,

young zhe bu ju." Confucius said: a wise man does not

suspect people who do the right or wrong thing; a

benevolent person does not worry whether they

Have friends; a courageous man are not afraid of anything.

T: . . . . . q + e . . . . .

Ok, very good, the third team.

Which one are you going to present?

G3: . . . . . pr+ el . . . . .

. . . . . + e . . . . .

. . . . .

"Zi yue: san jun ke duo shuai ye, pi fu bu

ke duo zhi ye." Confucius said: three armies

May beat the general of enemy, but the man's  
ambition cannot be taken away.

T: . . . . .

Good. Next, Group 5.

G5: . . . . . pr+ el . . . . .

..... + c .....

.....

I present “Zi yue: jun zi chen ren zhi mei, bu cheng ren

zhi e, xiao ren fan shi.” confucius said: gentleman would

like to help poor people, but some people do not help

poor people who are petty man.

T: ..... c

Very good. The last team, Group 6.

G6: ..... pr+ el .....

..... + c .....

.....

.....

.....

We discussed “Zi yue: jun zi yi yi wei zhi, li yi xing zhi, xun

yi chu zhi, xin yi cheng zhi. Jun zi zai.” Confucius said: a

gentleman thinks a man with righteousness is a gentleman.

But a real gentleman would act politely. And if he does the

wrong thing, he would admit it. He is confident to do

everything successfully. This is a real gentleman.

T: ..... c

Good. Every team discussed well.



### Appendix III: Interview questionnaire to teachers in the pilot

First of all, I would like to get some background information about you and your students.

1. Could you tell something about your students?
  - The grade of your students, number of students in your class, age of your students
2. Could you tell me something about yourself and your qualification?
  - How long have you been a teacher in primary school?
  - How long have you been working in this school?

Second, I would like to get detailed information about your view concerning the current curriculum and additional teaching the *Analects of Confucius* in the development of child's critical thinking in primary schools.

3. What curriculum do you apply in your class / school, such as Chinese, math, etc.?
4. Some people state that children's thinking ability is related to developing mathematic capability, but some people claim that children's thinking ability is cultivated by development of children's ideas and reasoning, which one do you agree with?
  - How do you develop children's thinking ability in class?
  - Do you think the development of children's critical thinking has an impact on their learning in other areas?
5. In terms of current curriculum in your school, does it involve the training of children's critical thinking?
  - If yes, please make some examples.
  - If no, do you think that children need to accept the training of children's critical thinking?
6. Based on your experience, have you encountered any problems to train children's thinking ability, and the strategies that you have found in dealing with these problems?

- If yes, please tell more information about the strategies you have applied to manage the problem.
  - If no, please share the useful way that you have employed to foster children's thinking skill?
  - Or do you think anything else or idea to develop the students' thinking capability?
7. Do you think the current curriculum has been influenced by Western concept?
    - If yes, how has it been influenced by Western concept?
  8. Have you ever taught the *Analects* to your students?
    - If yes, how do you teach the *Analects* approach to students?  
How do you think it is helpful for your students?  
Which grade is suitable to learn the *Analects*?
    - If no, do you think the *Analects* will be helpful for students?  
Why?
  9. Have you ever taught the *Analects* to your students?
    - If yes, how do teach the *Analects* approach to the students?  
Do you think it is helpful for your students?
    - If no, do you think the *Analects* will be helpful for your students?  
Why?
  10. Do you think teaching the *Analects* could develop the ability of child's thinking?
    - If yes, why do you think it can cultivate the capacity of child's thinking?
    - If no, why do you not think it can not assist the capability of child's thinking?
  11. Do you think learning the *Analects* could assist the students in all specific field areas?
    - If so, can you make some examples?
    - If not, can you express your arguments?
  12. Finally, any other points do you wish to discuss?

# Appendix

## (Main study)

**Appendix IV: Sample of intervention lesson plans**

<b>Lesson plan of the <i>Analects of Confucius</i></b>	
<b>Lesson: one</b>	<b>Condition Class: Intervention A</b>
<b>Ages: 7 to 8</b>	<b>Time scale: 40 minutes</b>
<b>The target sentence:</b>  子曰：「性相近也，習相遠也。」  Zi yue: "xing xiang jin ye, xi xiang yuan ye." Confucius said: "By nature, all men are alike. But differences in environment and Practices make them turn out differently."	
<b>Teaching materials:</b> picture, story, worksheets.	
<b>The activity of lesson one:</b> 1) The introduction of the course; 2) story telling; 3) group discussion	
<b>The aim of this lesson:</b> This is the first lesson. The pupils in group A are very young. So, this lesson intends to reach some targets as below. 1) making pupils know who Confucius is 2) making pupils understand what this course is 3) explaining how to do discussion with group peers 4) training pupils to start discussion with group peers	
<b>The role of teacher in this lesson</b> 1) to introduce herself to pupils; 2) to introduce Confucius to pupils; 3) to explain what this course about; 4) to tell a story about the target sentence; 5) to give details and examples to do discussion with group peers; 6) to lead pupils to discuss with group peers	
<b>The strategy in this lesson</b> 1) to encourage pupils to work in groups 2) to motivate pupils to share one another's ideas with group peers	

<b>Process of this lesson:</b>	
<i>Warm up</i>	
1. The teacher introduces herself to pupils.	8 minutes
2. The teacher explains who Confucius is.	
3. The teacher elucidates what this course about.	
<i>Focus:</i>	
1. Story telling: the teacher talks the story about the target sentence to students.	7 minutes
2. Explaining the rule to do group discussion: the teacher give details and examples to carry out the group discussion.	5 minutes
3. Group discussion: Pupils are assigned into small groups to discuss the meaning of the target sentence.	18 minutes
- 4 to 5 children are in a small group.	
- In the group discussion, each group has to discuss and make the proper explanation.	
- Also, each group has to work on a single output, and write the consensus up on the sheet as a group.	
<i>Ending</i>	
1. The teacher summarises all discussion in this lesson, and give the correct explanation of the target sentence.	2 minutes

## Appendix V: Questionnaires of parents' survey

### Parents' Survey

Dear parents:

The aim of this survey is to understand the phenomenon of family conversation about morality. The survey is divided into two sections: 1) personal information; 2) questionnaires of family talk at home about morals. Please spare some time to implement this survey. Your opinions will be appreciated and contributed to the study, indeed.

#### Section 1: Personal information

1. Are you a father or a mother in your family?

- • a father    • • a mother    • • others \_\_\_\_\_

2. What is your age?

- • under 20~    • • 21~30    • • 31 ~40    • • 41~50    • • 51~60    • • upper 61~

3. What is your highest level education you completed?

- • primary school    • • junior high school    • • high school
- • bachelor    • • master    • • doctor

4. What is your occupation? \_\_\_\_\_ international trade \_\_\_\_\_

5. How many children are there in your family?

- • 1    • • 2    • • 3    • • 4    • • 5    • • others \_\_\_\_\_

6. Please list genders and ages of each child in your family? (multiple choices)

\_\_\_\_\_ boys

- • under 6 ~ • • 7 to 8 • • 9 to 10 • • 11 to 12 • • others \_\_\_\_\_

\_\_\_\_\_ girls

- • under 6 ~ • • 7 to 8 • • 9 to 10 • • 11 to 12

- • others \_\_13\_\_\_\_\_

## Section 2: Questionnaires of family conversation about morals at home

- • *Please read the following story about moral dilemma.*

Tom is a smart boy. He sometimes gets top marks, but not always, and on this occasion he decided to cheat to make sure. The point then is that he may not have needed to—he might have done well anyway, and perhaps has problems with trusting himself, or with the public appearances of doing well. Eventually, he got top marks again.

1. What do you think about this situation?

---



---

2. What would you say to your children about this situation?

---



---

3. Do you have discussed with your children at home about similar issues?

- • no • • yes

If yes, how often do you talk with your children?

- • never • • rarely • • occasionally • • sometimes • • very often

- • *Please read the following sentence in the Analects of Confucius*

.....

Zi yue: “xing xiang jin ye, xi xiang yuan ye.”

4. What do you think is the meaning of this sentence?

---

---

5. What would you say about its meaning to your children?

---

---

6. Do you have discussed at home about similar proverbs?

- no
- yes

If yes, how often?

- never
- rarely
- occasionally
- sometimes
- very often

Thanks so much for your engagement!



## Appendix VI: Informed consent to participants' parents

English translation of Original Letter for Ethics Approval

03 October 2010

Primary School Parents

Tainan Public Primary School

**Re: The project of the Analects of Confucius: the Development of Critical Thinking in Middle  
Childhood in Taiwan**

Dear Parent,

I am a doctoral candidate from Institute of Education, University of London doing dissertation research. The purpose of my proposed study is to investigate the children to develop critical thinking from the Western concepts and the traditional Confucianism in the primary school education in the modern Taiwan. An in-depth analysis of the development of the children's thinking as interpreted and implemented in the regular curriculum and the added Analects of Confucius will be accepted. In such reverence, the letter which is sent to you will be looking for your agreement of doing the research with your child and you.

The study will continue for one semester (about 13 weeks). As a part of the project I would like consent to collect data from you and your child in two ways including survey from you and dialogic teaching lessons to your child. It will be appreciative if you could participate in my research. All information you offered will be employed merely for the research intentions, and your name and your child's name will be anonymised. If you agree to take part in this research, please sign the form below and return this letter back to me. Participation in this project is thoroughly voluntary and you may drop out immediately. If you would like additional information, please feel free to contact me by email, which is [blissfulalice@hotmail.com](mailto:blissfulalice@hotmail.com). Thank you for responding to this appeal.

Signature: \_\_\_\_\_

Sincerely,

Peng-Fei (Alice) Chen

PhD in Psychology and Human Development

Institute of Education, University of London

## Appendix VII: Questionnaires of teacher's interview in the main study

### Teacher's interview

First of all, I would like to get some background information about you and your students.

13. Could you tell me something about yourself and your qualification?
  - Gender and age
  - Please describe your educational background and specific field.
  - How long have you been a teacher in primary school?
  - How long have you been working in this school?
14. Could you tell something about your school, such as the size of your school, targets, expectation, and curriculum?

Second, I would like to get detailed information about your view concerning the current curriculum and additional courses of the *Analects of Confucius* and Western moral dilemma stories with dialogic teaching in the development of the child's critical thinking in primary schools.

15. What curriculum does your school / class adopt, such as Chinese, math, etc.?
4. Some people state that children's thinking ability is related to developing mathematic capability, but some people claim that children's thinking ability is cultivated by development of children's ideas and judgment, which one do you agree with?
  - How do you develop children's thinking ability in class?
  - Do you think the development of children's critical thinking has an impact on their learning in other areas?
5. In terms of current curriculum in your school, does it involve the training of children's critical thinking?
  - If yes, please make some examples.
  - If no, do you think that children need to accept the training of children's critical thinking?

6. Based on your experience, have you encountered any problems to train children's thinking ability, and the strategies that you have found in dealing with these problems?
  - If yes, please tell more information about the strategies you have applied to manage the problem.
  - If no, please share the useful way that you have employed to foster children's thinking skill?
  - Or do you think anything else or idea to develop the students' thinking capability?
7. Do you think the current curriculum has been influenced by Western concept?
  - If yes, how has it been influenced by Western concept?
8. Has teaching children's thinking skill been impacted by Western idea?
  - If yes, how has it been impacted by Western idea?
9. Have you ever taught the *Analects* to your students?
  - If yes, how do you teach the *Analects* approach to the students?  
How do you think it is helpful for your students?  
Which grade is suitable to learn the *Analects*?
  - If no, do you think the *Analects* will be helpful for students?  
Why?
10. Do you think teaching the *Analects* could develop the ability of child's critical thinking?
  - If yes, why do you think it can cultivate the capacity of child's critical thinking?
  - If no, why do you not think it cannot assist the capability of child's critical thinking?
11. Have you ever applied the Western stories to develop children's critical thinking?
  - If yes, please share the method which you have used to cultivate child's critical thinking.
12. Would you please define the explanation of dialogic teaching?
13. Have you ever applied the method of dialogic teaching to develop pupils' thinking ability?
  - If yes, please share how do use this method to train pupils' thinking ability.
  - If not, do you think that dialogic teaching is beneficial to develop pupils' thinking?
14. Finally, any other points do you wish to discuss?

## Appendix VIII: Informed consent letter to teachers

English translation of Original Letter for Ethics Approval

03 October 2010

Primary School Teachers

Tainan Public Primary School

**Re: The project of the Analects of Confucius: the Development of Critical Thinking in Middle  
Childhood in Taiwan**

Dear Teacher,

I am a doctoral candidate from Institute of Education, University of London doing dissertation research. The purpose of my proposed study is to investigate the children to develop critical thinking from the Western concepts and the traditional Confucianism in the primary school education in the modern Taiwan. An in-depth analysis of the development of the children's thinking as interpreted and implemented in the regular curriculum and the added Analects of Confucius will be accepted. In such reverence, the letter which is sent to you will be looking for your agreement of doing the research with your pupils and you.

The study will continue for one semester (about 13 weeks). As a part of the project I would like consent to collect data from you and your child in three ways including interview from you, survey from your students' parents, and dialogic teaching lessons to your students. It will be appreciative if you could participate in my research. All information you offered will be employed merely for the research intentions, and your name, your pupils' and their parents' names will be anonymised. If you agree to take part in this research, please sign the form below and return this letter back to me. Participation in this project is thoroughly voluntary and you may drop out immediately. If you would like additional information, please feel free to contact me by email, which is [blissfulalice@hotmail.com](mailto:blissfulalice@hotmail.com). Thank you for responding to this appeal.

Signature: \_\_\_\_\_

Sincerely,

Peng-Fei (Alice) Chen

PhD in Psychology and Human Development

Institute of Education, University of London

## Appendix IX: Sample of the post-test

### Coding

1. Q: Does everything have the views of right and wrong?  
Why? Please make examples.

R: Someone requires you that do not do deviant things. pr  
You have to follow it. pr  
Because if something wrong happens, you have to ex + el  
be responsible for that.  
For example, if the teacher tell you that do not climb the pr  
wall, you must listen to her.  
Because if you climb the wall, you probably will fall ex + el  
down and hurt yourself.

2. Q: . . . . .

Zi yue: "Zhong wu zhi, bi cha yan; zhong hao zhi, bi cha yan."  
Confucius said: "When a person is unpopular, it is necessary to  
find out why that is so. When a person is popular, it is also  
necessary to find out why."

R: People cannot make a decision immediately. pr  
This is wrong. pr  
Because before you decide something, you have to think. ex  
If you do not think before making a decision, you will regret. ex  
So, people will regret doing something without thinking. ex + el

3. Q: Does everything have the views of right and wrong?  
Why? Please make examples.

R: Yes, it does. r + a  
Because one side should be right, the other should be wrong. ex  
For example, in the story, a young man was hungry, and then pr  
he tied his horse to a tree.  
Soon later, a rich man tied his horse to a same tree.  
The young man told the rich man that my horse has not been

trained yet; if you tie your horse to the same tree closed to my horse, your horse might be kicked deadly.

But the rich man ignored the warning from young man.

So his horse died by kicking.

The rich man was angry and went to the court.

But he failed because a young man had already given him a warning. el

This story told us that when someone gave you a warning, you still insisted to do whatever you wanted. pr

This is wrong. d

But someone did not give you a warning to take notice of something dangerous, this was his fault. el

Because something is difficult to be determined right or wrong, if it does not offer a warning. ex + el

If a rich man tied his horse to another tree, it was still died by kicking. pr

This may not be told right or wrong. pr

So something has right and wrong, something does not. el

4. Q: . . . . .  
 . . . . .  
 . . . . .

Zi Zhang wen ren yu Kong Zi. Kong Zi yue: “Neng xing wu zhe yu tian xiang, wei ren yi.” Qing weng zi. Yue: “Gong, guan, xing, ming, hui. Gong zhe bu hui, guan zhe de zhong, xing zhe ren ren yan, ming zhe you gong, hui zhe zhu yi shi ren.”

- R: It is a saying: “Although you have only a meal, you have to share to others.” pr

Once, my grandmother saw a person to get food from the litter for surviving. pr

Grandma thought this man was so poor, so she gave him a meal.

This man told grandma: “if you don’t let me wipe your shoes, I won’t take your meal.”

Grandma said: “It doesn’t matter. You need to eat something.

If you don’t have food, you will be starving to death.”

Afterward, Grandma offered him meals every day.

This man appreciated Grandma very much.

el

Confucius said: “Gong zhe bu hui is to respect people, you

ex

will not get insult.

Guan zhe de zhong is to be generous to people, you can get

ex

respect and populace from others.

Xing zhe ren yan is that your speaking should be reliable,

ex

you can get people’s reliance.

Ming zhe xu gong is doing things nimbly, you will achieve success.

ex

Hui zhe zhu yi shi ren is to give people help and benefit, they may

ex

appreciate you and return good feedback to you, and you can

demand others.

## Appendix X: Sample of children's dialogue in the main study

### Intervention A Lesson six – group one

Pupils: P Teachers: T

- |     |   | P               | T |
|-----|---|-----------------|---|
| 1.  | S1: . . . . .   | pr              |   |
|     | Zi yue is Confucius' saying.  |                 |   |
| 2.  | S2: . . . . .   | q               |   |
|     | What is the meaning of 'Zi zhe bu huo'?                                   |                 |   |
| 3.  | S3: . . . . .   | pr              |   |
|     | I don't know.   |                 |   |
| 4.  | S1: . . . . .   | pr              |   |
|     | It should be the person can realize something,<br>he may not be confused. |                 |   |
| 5.  | S2: . . . . .   | q               |   |
|     | Is it that do not be confused? Or do not be complex?                      |                 |   |
| 6.  | S4: . . . . .   | el + rb         |   |
|     | It should be someone who realize something do not<br>be confused.         |                 |   |
| 7.  | S3: . . . . .   | pr              |   |
|     | I think it should a wise man has a good ability.                          |                 |   |
| 8.  | S1: . . . . .   | a + el + rb + r |   |
|     | <u>Umm</u> , The man who has a good ability is not confused.              |                 |   |
| 9.  | S3: . . . . .   | q               |   |
|     | How about 'ren zhe bu you'?   |                 |   |
| 10. | S1: . . . . .   | pr              |   |
|     | 'Ren zhe' means a benevolent person.                                      |                 |   |
| 11. | T: . . . . .  |                 | q |
|     | How's your discussion?  |                 |   |
| 12. | S2: . . . . .   | r               |   |
|     | We are discussing 'ren zhe bu you'.                                       |                 |   |
| 13. | T: . . . . .  |                 | q |
|     | What does 'ren' represent?  |                 |   |
| 14. | S2: . . . . .   | pr              |   |
|     | 'Ren' represents 'human'.   |                 |   |
| 15. | T: . . . . .  |                 | q |
|     | What kind of humans?  |                 |   |
| 16. | S5: . . . . .   | pr + r          |   |





So 'yong zhe bu ju' is a brave person:::

37. S5: ..... rb

Do not be afraid of death!

38. S1: ..... a

Ok, that's it.

### Intervention A-1 Lesson six – group one

Pupils: P Teachers: T

P

T

1. T: ..... q ..... .

Do you think hopes exist in every situation?

2. S1: ..... pr ..... .

Teacher, I think one thing doesn't have hopes.

3. T: ..... q

What is it?

4. S1: ( ..... pr ..... .

(If someone makes a serious and strict crime, it doesn't have hopes.

5. T: ( ..... q ..... .  
.....

(If someone makes a serious and strict crime, it doesn't have hopes. Do other peers have the same thought?

6. S2: ..... pr

Not really.

7. T: ..... q

Why?

8. S2: ..... pr

Sometimes, it probably need to be punished any.

9. S3: ..... d + pr + r ..... .

No, (if he was adjudicated the death penalty, it is hopeless.

10. T: ( ..... q ..... .  
.....

(if he was adjudicated the death penalty, it is hopeless.

Do you think so?

11. Ss: ..... a

Yes!

12. T: ..... pr

- But although he was announced the death penalty,  
he can appeal to a higher court.
13. S4: ..... q  
What does appeal mean?
14. T: ..... pr .....  
.....  
Appeal means if you do not agree with the sentence,  
you may try to get one more chance to re-evaluate.
15. S1: ..... pr .....  
But even though you appealed, you still lost.  
It is also hopeless.
16. T: ..... q  
Do you agree with it?
17. Ss: ..... a  
Yes!
18. S2: ..... pr + r .....  
The people who were announced the death penalty,  
they should be blamed and punished.
19. T: ..... pr  
So you think something is hopeless.
20. Ss: ..... a  
Yes!
21. T: ..... q  
So what is hopeful?
22. S3: ..... pr + r .....  
.....  
If someone was treated unjustly, he could try to appeal  
again, he probably wouldn't be announced the death  
penalty. This is hopeful.
23. T: ..... q  
Do you agree?
24. Ss: ..... r  
Yes.
25. T: ..... pr  
Ok, you think more and continue the discussion.
26. S3: ..... pr .....  
.....  
Someone has hopes, someone doesn't. Sometimes

- something is hopeful, something is not.
27. S1: ..... pr  
So it is uncertain.
28. S3: ..... q  
What is uncertain?
29. S4: ..... rb  
It is someone has hopes, but someone does not.
30. S1: ..... pr  
Okay, please write it down.
31. S2: ..... rb + ex + q .....  
.....  
Because of the death penalty, it is hopeless. Do you agree?
32. Ss: ..... a + r  
Agree!

#### Intervention B Lesson seven –group one

- Pupils: P Teacher: T**
1. S1: ..... q .....  
.....  
What is the meaning of "Zi yue: jun zi cheng ren zhi mei, bu cheng ren zhi e." Xiao ren fan shi!"?
2. T: ..... q  
Have you started to discuss?
3. S2: ..... pr .....  
.....  
Confucius said: "if a gentleman is a moral person, it is good. But if he is a mean person, he cannot be called a gentleman. The petty man is opposite."
4. T: ..... q  
Do you agree with it?
5. S3: ..... d  
Disagree!
6. T: ..... q  
Why did you disagree?
7. S3: ..... ex + r  
Because the meaning she said was wrong.
8. T: ..... q

- What do you think?
9. S3: ..... pr + r .....  
It should be a gentleman would help people,  
but a petty man would not.
10. S4: ..... q  
What is the meaning of 'bu cheng ren zhi e'?
11. S1: ..... a + pr  
Yes. You did not explain this part.
12. T: ..... pr  
Okay, you continue to discuss.
13. S1: ..... q  
Which explanation is better, everyone?
14. S5: ..... pr + rb .....  
I think if (a gentleman has a good morality, this is  
more reasonable.
15. S2: ..... a + rb .....  
Yes, (a gentleman has a good morality, this is good.
16. S3: ..... d + rb + e + r .....  
.....  
No, it should say that if (a gentleman has a good morality  
and justice, this is good.
17. S5: ..... a + rb  
Yes, (a gentleman should have a good morality and justice
18. S1: ..... q .....  
.....  
Does every agree that 'jun zi cheng ren zhi mei' is if a  
gentleman has a good morality and justice, this is good.
19. Ss: ..... a + r  
Agree!
20. S1: ..... q  
Okay, how about 'bu cheng ren zhi e'?
21. S2: ..... rb  
If he is very mean, he cannot be named as a gentleman.
22. S1: ..... q  
Does everyone agree?
23. S4: ..... a + q .....  
Yes, if a person is mean, how can he be a gentleman?
24. S3: ..... pr .....  
.....

- But you should be clear to say how he mean is,  
otherwise it is ambiguous.
25. S5: . . . . . a  
Yes, it needs to be described more detailed, it will be  
better.
26. S1: . . . . . q  
What do you think how you can explain better?
27. S3: . . . . . pr + r . . . . .  
If someone often likes to bully other people,  
this is not a gentleman.
28. S1: . . . . . q  
Does everyone agree?
29. S5: . . . . . a + r  
Umm, this is better.
30. Ss: . . . . . a  
Agree!
31. S1: . . . . . q  
Okay, how about 'xiao ren fan shi'?
32. S2: . . . . . rb + r  
But a petty man is opposite.
33. S1: . . . . . q  
What does everyone think?
34. S3: . . . . . a + r  
Yes.
35. Ss: . . . . . a  
Agree!
36. S1: . . . . . a + rb + el + q . . . . .  
. . . . .  
. . . . .  
Okay. So, the meaning of this sentence is Confucius said:  
"if a gentleman has a good morality and justice, this is  
good. If someone often likes to bully other people,  
this is not a gentleman. But a petty man is opposite."  
Does everyone agree?
37. Ss: . . . . . a + r  
Agree!

**Intervention B-1 Lesson seven – group one****Pupils: P Teacher: T****P T**

1. S1: ..... q  
Is anyone lucky? Please make an example.
2. S2: ..... a + pr + r  
Yes, the child who was born in a rich family is lucky.
3. S3: ..... a + pr .....  
Yes, the person who was born in a poor family is  
unlucky.
4. S4: ..... 100 ..... pr .....  
To get full mark, 100, in the exam is lucky.  
To get bad mark is unlucky.
5. S2: ..... a  
Yes!
6. S1: ..... q  
So some people are lucky?
7. S2: ..... a  
Yes!
8. S5: ..... d  
No, it is uncertain.
9. S1: ..... q  
Is it uncertain?
10. S3: ..... a + r  
Yes, it's uncertain.
11. S1: ..... a + rb  
Okay, please write down 'it's uncertain'.
12. T: ..... q  
How's your discussion going?
13. S1: ..... r  
It's nearly finished.
14. T: ..... q  
Is someone lucky?
15. Ss: ..... rb + r  
It's uncertain.
16. T: ..... q  
Why is it uncertain?
17. S5: ..... ex + el .....  
Because someone is lucky, someone is unlucky.

18. T: . . . . . q  
Can you make an example?
19. S2: . . . . . rb  
To born in a rich family is lucky.
20. S3: → . . . . . rb → r  
=To born in a poor family is unlucky.
21. T: . . . . . q  
Do you agree with it?
22. Ss: . . . . . a + r  
Agree.
23. T: . . . . . q  
What else?
24. S4: . . . . . rb + r . . . . .  
To get full mark is lucky. To get bad mark is unlucky.
25. T: . . . . . q  
Are they?
26. Ss: . . . . . a  
Yes!
27. T: . . . . . pr . . . . .  
But test should depend on your hard work.
28. S1: . . . . . pr + r . . . . .  
. . . . .  
But sometimes it depends on self-fortune whether  
you can answer all questions correctly.
29. T: . . . . . q  
Is it?
30. Ss: . . . . . a + r  
Yes!
31. T: . . . . . pr  
Ok, you continue to discuss.
32. S1: . . . . . q  
What else?
33. S5: . . . . . pr + r . . . . .  
. . . . .  
To study in an expensive school is lucky. To study in a  
poor school is unlucky.
34. S2: . . . . . q  
Why?



35. S5: . . . . . pr  
I don't know.
36. S4: . . . . . ex + r . . . .  
Because a poor school may collapse one day.
37. S5: . . . . . a  
Yes.
38. S1: . . . . . q  
Is someone lucky?
39. S2: . . . . . r  
It's not certain. =
40. S4: . . . . . rb . . . . .  
=To get full scores in test is lucky. To get bad scores is  
unlucky.
41. S3: . . . . . rb . . . . .  
. . . . .  
The children who were born in a rich family are lucky.  
The children who were born in a poor family are unlucky.
42. S5: . . . . . rb . . . . .  
. . . . .  
To study in a rich school is lucky. To study a poor school  
is unlucky.
43. S1: . . . . . rb + cl . . . . .  
. . . . .  
. . . . .  
. . . . .  
It's uncertain. To get full scores in test is lucky. To get  
bad scores is unlucky. The children who were born in a  
rich family are lucky. The children who were born in a poor  
family are unlucky. To study in a rich school is lucky. To study  
a poor school is unlucky.

## Intervention C Lesson seven – group one

Pupils: P Teacher: T

P

T

1. S1: .....q.....  
.....  
Zi yue: "jun zi cheng ren zi mei, bu cheng ren zhi  
e: xiao ren fan shi!" What is the meaning of 'jun  
zzi cheng ren zi mei?
2. S2: ..... pr  
Mei means good morality.
3. S3: ..... d  
It should not be good morality.
4. S1: ..... q  
What do you think?
5. S: (0.1)
6. T: ..... q.....  
.....  
What is the meaning of Zi yue: "jun zi cheng ren zi mei,  
bu cheng ren zhi e: xiao ren fan shi!"?
7. S4: ..... pr  
It should be related to 'Qin Shihuang'.
8. T: ..... q  
Is it related to 'Qin Shihuang'?
9. S2: ..... d  
No, it's not.
10. T: ..... q  
What is the meaning of 'zi yue'?
11. Ss: ..... pr + r  
Confucius saying.
12. T: ..... q  
What is the meaning of 'jun zi cheng ren zhi mei'?
13. S3: ..... pr  
A gentleman is to achieve for someone.
14. T: ..... q  
What does a gentleman achieve for someone?
15. S: (0.1)
16. T: ..... q  
What is the meaning of 'mei'?
17. S2: ..... rb + r

- Good morality.
18. T: (• • • • • q  
Does everyone agree with the idea of good morality?
19. S4: (• • • • • a + r  
Agree.
20. T: (• • • • • q  
So what is the meaning of 'jun zi cheng ren zhi mei'?
21. S2: (• • • • • rb + el + r  
(A gentleman is to achieve for someone's good morals.
22. T: (• • • • • q  
Do you agree with the idea of (a gentleman is to  
achieve for someone's good morals?
23. S4: (• • • • • a + r  
Agree.
24. T: (• • • • • q  
How about 'bu cheng ren zhi e'?
25. S5: (• • • • • pr  
(Do not achieve for someone's kindness or meanness.
26. T: (• • • • • q  
Is it that (do not achieve for someone's kindness or  
meanness?
27. S5: (• • • • • pr  
I am not sure.
28. T: (• • • • • q  
What is the meaning of 'e'?
29. S5: (• • • • • pr + r  
It means the bad things.
30. T: (• • • • • q  
So what is the meaning of this sentence?
31. S2: (• • • • • rb + el • • • • •  
A gentleman is to achieve for someone's good morals.  
Do not achieve for someone's meanness.
32. T: (• • • • • q  
Does everyone agree with it?
33. S3: (• • • • • pr  
I think there is something wrong.
34. T: (• • • • • pr  
Ok, you think about it and continue the discussion.

35. S3: ..... pr  
'Xiao ren fan shi' is a petty man is different.
36. S1: ..... q  
What is the better meaning of 'jun zi cheng ren zhi mei'?
37. S3: ..... d  
Mei does not mean good morality.
38. S1: ..... q  
What does it mean?
39. S5: ..... pr  
'Bu cheng ren zhi e' is that do not achieve for someone's meanness.
40. S3: ..... d + pr  
No, it should not be that do not achieve for someone's meanness.
41. S2: ..... q  
Why does it mean meanness?
42. S3: ..... ex + r  
.....  
Because I am sure about the meaning of 'e' in this sentence. But I think it is hastiness.
43. S4: ..... q  
Does it mean that do not achieve for someone's hastiness?
44. S3: ..... pr + r  
Or it means that do not make someone's worry.
45. S5: ..... a  
Umm, it sounds ok.
46. S4: ..... a + rb  
Yes, do not make someone's worry.
47. S1: ..... q  
How about the meaning of 'xiao ren fan shi'?
48. S5: ..... pr + r  
'Xiao ren fan shi' means the petty man is opposite.
49. S1: ..... q  
What is 'mei'?
50. S3: ..... pr + r  
'Mei' means beautiful dreams.
51. S4: ..... a + rb + el  
Good, a gentleman helps someone to achieve beautiful

- dreams.
52. S2: ..... a + rb  
Yes, do make someone's worry.
53. S5: ..... rb  
A petty man is opposite.
54. S1: ..... rb + el .....  
.....  
.....  
Zi yue: "jun zi cheng ren zi mei, bu cheng ren zhi  
e: xiao ren fan shi!" means a gentleman helps someone  
to achieve their dreams, do not make someone's worry.  
A petty man is opposite.

### Intervention C-1 Lesson seven – group one

- |     | Pupils: P   | Teacher: T                                   | P       | T     |
|-----|---|--|---------|-------|
| 1.  | S1: .....   | Are some people lucky? Please make examples. | q       | ..... |
| 2.  | S2: .....<br>Yes.                                     |  | a       |       |
| 3.  | S1: .....<br>Why?                                     |  | q       |       |
| 4.  | S2: .....<br>Because some people were born with luck. |  | ex + pr |       |
| 5.  | S3: .....<br>Yes, they were born in rich families.    |  | a + pr  |       |
| 6.  | S2: .....<br>No.                                      |  | d       |       |
| 7.  | S3: .....<br>How is it?                               |  | q       |       |
| 8.  | T: .....<br>Are some people lucky?                    |  |         | q     |
| 9.  | S2: .....<br>Yes.                                     |  | a + r   |       |
| 10. | T: .....<br>Why are they lucky?                       |  |         | q     |
| 11. | S2: .....<br>.....                                    |  | ex + pr | ..... |



- street.
29. S2: ..... a + pr  
Yes, some people could find 10,000 dollars on the street.
30. S4: ..... pr  
Some people could pick up money on the motorway easily.
31. S1: ..... q  
Do you mean the news that someone spread money on the motorway.
32. S4: ..... a  
Yes!
33. S1: ..... ex + pr + r  
.....  
Because the person had too money, he also got mental problem. That is why he did this.
34. S2: ..... pr  
If I could have those money, it would be great.
35. S1: ..... q  
Anything elase?
36. S5: ..... pr + r  
.....  
If it was a landslide, some cars in front was covered, some cars behind was not, these people were very lucky.
37. S2: ..... rb + el  
.....  
It is like the news of the landslide in the motorway. A minute before the beginning of landslide, some car drove through, it was ok. A minute after the end of landslide, the cars behind were ok too, they were really lucky.
38. S1: ..... a + pr  
Okay, that's it.
39. S2: ..... a  
Yes!
40. S1: ..... pr  
Let's read it again.

41. Ss: ..... r b + e l .....  
.....  
.....  
.....  
.....

Firstly, some people were born with luck, and  
bring good fortune either for finance or health for  
parents. Secondly, whenever someone bought lotteries,  
he could win money. Thirdly, If it was a landslide, some  
cars in front was covered, some cars behind was not,  
these people were very lucky.



### Appendix XI: Figures of target children's observed dialogic skills

Table A. Mean frequency of target children's observed dialogue for 'proposition' (Standard deviations in brackets)

Intervention age groups	Time											
	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10	Time 11	Time 12
<b>Class A (aged 7-8) (N=6)</b>	16.33 (9.56)	9.33 (4.59)	11.50 (3.08)	9.33 (3.45)	10.33 (4.50)	10.83 (3.60)	10.33 (3.56)	8.33 (5.32)	8.83 (1.84)	10.33 (1.75)	9.67 (1.37)	8.67 (1.03)
<b>Class B (aged 9-10)(N=6)</b>	10.33 (3.67)	10.67 (3.01)	12.50 (5.93)	10.83 (3.55)	13.33 (2.58)	11.17 (3.13)	8.00 (1.10)	10.67 (5.16)	9.67 (4.50)	11.33 (2.42)	8.33 (2.25)	11.00 (3.52)
<b>Class C (aged 11-12)(N=6)</b>	12.83 (3.06)	11.33 (2.16)	13.83 (4.02)	12.17 (4.96)	11.33 (4.18)	17.00 (7.04)	17.33 (4.89)	12.83 (3.66)	15.00 (3.95)	14.33 (4.27)	15.17 (4.36)	14.33 (4.89)
<b>The Analects (N=9)</b>	15.44 (7.92)	11.67 (2.00)	13.33 (4.80)	12.89 (4.54)	13.44 (2.74)	15.67 (6.12)	12.89 (6.33)	12.56 (4.42)	10.78 (5.63)	12.22 (3.35)	11.78 (4.94)	11.11 (5.04)
<b>Moral Dilemma (N=9)</b>	10.89 (3.26)	9.22 (3.99)	11.89 (3.98)	8.67 (1.73)	9.89 (4.08)	10.33 (3.12)	10.89 (4.08)	8.67 (4.72)	11.56 (3.05)	11.78 (3.50)	10.33 (3.20)	11.56 (3.17)
<b>Total</b>	13.17 (6.33)	10.44 (3.31)	12.61 (4.34)	10.78 (3.98)	11.67 (3.84)	13.00 (5.46)	11.89 (5.27)	10.61 (4.87)	11.17 (4.41)	12.00 (3.33)	11.06 (4.11)	11.33 (4.09)

Table B. Mean frequency of target children's observed dialogue for 'disagreement' (Standard deviations in brackets)

Intervention age groups / lesson type	Time												
	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10	Time 11	Time 12	Total
<b>Class A</b> (N=6)	1.67 (0.52)	0.67 (0.82)	1.00 (0.89)	2.83 (0.41)	1.83 (1.17)	1.67 (1.03)	2.50 (1.52)	2.83 (1.33)	1.67 (1.86)	2.00 (1.10)	3.67 (1.75)	3.00 (0.89)	2.11
<b>Class B</b> (N=6)	0.67 (1.03)	0.33 (0.52)	1.33 (1.21)	1.50 (1.64)	2.50 (0.55)	2.17 (1.17)	1.50 (0.84)	2.00 (1.90)	2.67 (0.82)	2.67 (0.98)	2.67 (1.03)	2.67 (1.51)	1.85
<b>Class C</b> (N=6)	1.83 (1.72)	1.77 (1.33)	2.50 (2.43)	2.33 (1.97)	2.67 (1.75)	3.83 (1.94)	3.17 (1.72)	4.50 (2.74)	4.50 (2.88)	3.50 (1.87)	4.17 (1.33)	4.50 (1.38)	3.27
<b>The Analects</b> (N=9)	0.89 (1.05)	0.56 (0.88)	1.33 (1.58)	2.44 (1.59)	2.22 (1.59)	3.33 (1.80)	3.11 (1.70)	3.78 (2.28)	4.11 (2.37)	3.11 (1.54)	3.11 (1.54)	3.11 (1.74)	2.59
<b>Moral Dilemma</b> (N=9)	1.89 (1.27)	0.89 (1.05)	1.89 (1.83)	2.00 (1.50)	2.44 (1.67)	1.78 (1.10)	1.67 (0.87)	2.44 (2.07)	1.78 (1.48)	2.00 (1.23)	3.89 (1.36)	3.33 (1.23)	2.17
<b>Total</b>	1.39 (1.24)	0.72 (0.96)	1.61 (1.69)	2.22 (1.52)	2.33 (1.24)	2.56 (1.65)	2.39 (1.50)	3.11 (2.22)	2.94 (2.26)	2.56 (1.46)	3.50 (1.47)	3.39 (1.46)	

Table C. Mean frequency of target children's observed dialogue for 'agreement' (Standard deviations in brackets)

Intervention age groups / lesson type	Time												
	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10	Time 11	Time 12	Total
<b>Class A</b> (N=6)	3.50 (1.52)	3.17 (2.04)	3.83 (2.93)	6.67 (3.20)	5.83 (3.55)	5.33 (2.34)	4.33 (1.03)	6.17 (3.06)	7.17 (1.17)	7.17 (1.94)	7.17 (1.72)	9.00 (2.00)	5.78
<b>Class B</b> (N=6)	7.00 (2.97)	5.83 (2.40)	5.67 (3.14)	6.33 (2.25)	7.67 (1.97)	8.00 (2.10)	9.50 (1.38)	7.17 (1.72)	7.67 (2.07)	8.33 (1.97)	8.83 (1.33)	8.00 (1.27)	7.50
<b>Class C</b> (N=6)	6.33 (1.63)	4.67 (2.58)	4.50 (1.38)	7.00 (2.28)	6.17 (1.84)	6.33 (2.88)	8.67 (2.66)	8.17 (2.04)	9.00 (2.19)	9.00 (2.83)	11.00 (2.10)	11.00 (3.90)	7.65
<b>The Analects</b> (N=9)	6.22 (3.19)	4.78 (2.86)	4.67 (3.16)	5.89 (2.42)	5.44 (2.96)	6.78 (2.54)	7.00 (3.08)	7.00 (2.78)	7.89 (1.62)	8.78 (2.22)	8.78 (3.15)	10.67 (2.74)	6.99
<b>Moral Dilemma</b> (N=9)	5.00 (1.66)	4.33 (2.18)	4.67 (2.00)	7.44 (2.40)	7.67 (1.50)	6.33 (2.74)	8.00 (2.78)	7.33 (2.00)	8.00 (2.29)	7.56 (2.30)	9.22 (1.09)	8.00 (2.24)	6.96
<b>Total</b>	5.61 (2.55)	4.56 (2.48)	4.67 (2.57)	6.67 (2.47)	6.56 (2.55)	6.56 (2.57)	7.50 (2.90)	7.17 (2.36)	7.94 (1.92)	8.17 (2.28)	9.00 (2.30)	9.33 (2.79)	

Table D. Mean frequency of target children's observed dialogue for 'explanation' (Standard deviations in brackets)

Intervention age groups / lesson type	Time												
	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10	Time 11	Time 12	Total
<b>Class A</b> (N=6)	1.33 (1.51)	1.83 (2.23)	0.67 (1.21)	1.33 (1.51)	1.33 (2.34)	0.67 (1.21)	0.17 (0.41)	1.50 (2.35)	0.67 (0.82)	0.50 (0.84)	1.83 (2.23)	1.33 (1.21)	1.10
<b>Class B</b> (N=6)	2.00 (2.61)	0.33 (0.82)	0.50 (0.84)	0.67 (1.03)	0.50 (0.84)	3.00 (2.76)	2.83 (1.17)	2.50 (1.05)	2.00 (1.10)	0.67 (0.82)	1.83 (1.72)	1.33 (1.37)	1.51
<b>Class C</b> (N=6)	1.17 (1.17)	0.83 (0.75)	2.33 (1.97)	1.83 (2.14)	0.67 (0.82)	1.50 (1.05)	1.50 (0.84)	2.50 (1.05)	2.17 (1.33)	1.33 (1.51)	3.00 (0.89)	2.17 (0.75)	1.75
<b>The Analects</b> (N=9)	0.44 (0.73)	0.33 (0.71)	0.33 (0.50)	0.56 (0.73)	0.33 (0.50)	1.33 (1.50)	1.33 (1.58)	1.78 (1.48)	2.00 (1.41)	1.33 (1.23)	1.33 (1.23)	1.56 (1.24)	1.05
<b>Moral Dilemma</b> (N=9)	2.56 (1.94)	1.67 (1.80)	2.00 (1.87)	2.00 (1.94)	1.33 (1.93)	2.11 (2.42)	1.67 (1.23)	2.56 (1.67)	1.22 (0.97)	0.33 (1.51)	3.11 (1.69)	1.67 (1.12)	1.85
<b>Total</b>	1.50 (1.79)	1.00 (1.50)	1.17 (1.58)	1.28 (1.60)	0.83 (1.47)	1.72 (2.00)	1.50 (1.38)	2.17 (1.58)	1.61 (1.24)	0.83 (1.10)	2.22 (1.70)	1.61 (1.15)	

Table E. Mean frequency of target children's observed dialogue for 'elaboration' (Standard deviations in brackets)

Intervention		Time											
age groups	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10	Time 11	Time 12	Total
<b>Class A</b> (N=9)	0.83 (0.75)	1.33 (1.03)	0.83 (0.41)	2.33 (0.52)	1.50 (1.52)	2.00 (1.67)	1.00 (0.89)	1.50 (1.64)	1.67 (1.63)	1.83 (1.33)	1.83 (1.17)	2.50 (1.76)	1.60
<b>Class B</b> (N=9)	1.50 (0.84)	2.00 (1.67)	2.00 (0.89)	2.50 (1.05)	0.67 (0.82)	2.00 (0.90)	2.00 (0.63)	2.00 (0.89)	2.17 (1.47)	1.67 (1.21)	3.50 (1.05)	3.67 (1.51)	2.14
<b>Class C</b> (N=9)	1.17 (0.41)	1.17 (0.98)	2.83 (1.17)	1.67 (0.52)	2.33 (1.51)	2.67 (0.82)	5.00 (1.90)	2.67 (1.37)	3.33 (2.07)	3.17 (1.17)	4.33 (1.21)	3.67 (1.63)	2.83
<b>Total</b>	1.17 (0.71)	1.50 (1.25)	1.89 (1.18)	2.17 (0.79)	1.50 (1.43)	2.22 (1.17)	2.67 (2.11)	2.06 (1.35)	2.39 (1.79)	2.22 (1.35)	3.22 (1.52)	3.28 (1.64)	

Table F. Mean frequency of target children's observed dialogue for 'reference back' (Standard deviations in brackets)

Intervention classes / age groups	Time											
	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10	Time 11	Time 12 Total
<b>Class A</b> (N=3)	6.00 (1.00)	3.67 (2.08)	4.00 (2.00)	6.33 (1.16)	6.00 (1.00)	5.33 (1.53)	5.00 (3.00)	6.67 (1.53)	7.67 (4.04)	4.67 (3.05)	3.67 (1.53)	8.00 (2.00)
<b>Class A-1</b> (N=3)	4.67 (3.79)	5.33 (3.22)	5.00 (3.61)	5.00 (2.65)	4.00 (3.00)	3.67 (3.79)	3.67 (0.58)	1.33 (1.16)	1.67 (2.08)	3.67 (1.53)	3.33 (1.53)	2.67 (2.08)
<b>Class B</b> (N=3)	7.67 (0.58)	8.33 (3.51)	5.00 (2.00)	8.67 (2.52)	13.00 (1.73)	5.67 (3.51)	6.67 (1.53)	5.67 (0.58)	5.33 (1.16)	11.33 (1.16)	11.00 (2.65)	10.33 (2.31)
<b>Class B-1</b> (N=3)	8.33 (3.79)	7.67 (0.58)	7.00 (4.36)	11.33 (3.51)	6.67 (2.52)	8.33 (2.08)	8.67 (3.22)	10.33 (2.08)	8.67 (2.89)	8.00 (2.65)	8.00 (1.73)	7.67 (3.51)
<b>Class C</b> (N=3)	8.67 (1.16)	10.33 (3.06)	10.33 (4.17)	10.33 (4.04)	13.33 (2.08)	13.00 (8.54)	11.33 (5.78)	15.67 (2.08)	12.33 (2.52)	11.67 (2.89)	10.67 (1.53)	10.33 (2.31)
<b>Class C-1</b> (N=3)	6.33 (0.58)	6.33 (3.22)	9.67 (2.31)	8.00 (1.00)	7.33 (3.51)	11.00 (2.65)	4.00 (2.65)	7.00 (1.73)	4.00 (2.00)	10.00 (2.00)	6.67 (0.58)	8.33 (2.08)
<b>Class A</b> (N=6)	5.33 (2.58)	4.50 (2.59)	4.50 (2.67)	5.67 (1.97)	5.00 (2.28)	4.50 (2.74)	4.33 (2.07)	4.00 (3.16)	4.67 (4.37)	4.17 (2.23)	3.50 (1.38)	4.63 (3.45)
<b>Class B</b> (N=6)	8.00 (2.45)	8.00 (2.28)	6.00 (3.23)	10.00 (3.10)	9.83 (3.97)	7.00 (2.97)	7.67 (2.50)	8.00 (2.90)	7.00 (2.68)	9.67 (2.58)	9.50 (2.59)	8.31 (3.03)
<b>Class C</b> (N=6)	7.50 (1.52)	8.33 (3.56)	10.00 (3.03)	9.17 (2.93)	10.33 (4.18)	12.00 (5.76)	7.67 (5.68)	11.33 (5.05)	8.17 (5.00)	10.83 (2.40)	8.67 (2.42)	9.44 (2.25)

Table G. Mean frequency of target children's observed dialogue for 'resolution' (Standard deviations in brackets)

Intervention age groups / lesson type	Time												
	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10	Time 11	Time 12	Total
<b>Class A</b> (N=6)	3.83 (2.14)	3.83 (2.23)	4.83 (1.94)	3.67 (1.37)	5.17 (1.17)	6.17 (1.47)	3.67 (1.86)	5.00 (1.55)	5.50 (2.07)	5.17 (2.64)	5.50 (2.59)	6.83 (0.75)	4.93
<b>Class B</b> (N=6)	7.00 (3.90)	5.50 (2.95)	6.67 (1.21)	6.67 (2.94)	6.50 (1.87)	9.17 (2.23)	8.67 (1.03)	8.67 (3.56)	7.00 (2.00)	9.00 (2.61)	9.17 (2.48)	9.17 (1.84)	7.77
<b>Class C</b> (N=6)	7.67 (1.51)	7.83 (3.06)	5.67 (3.72)	6.33 (2.81)	7.83 (1.84)	7.50 (3.27)	8.33 (5.32)	7.17 (2.64)	6.00 (1.10)	6.00 (0.63)	5.00 (1.79)	6.83 (3.13)	6.85
<b>The Analects</b> (N=9)	6.44 (1.88)	6.11 (3.14)	6.67 (2.78)	4.67 (2.18)	6.11 (1.37)	8.44 (2.60)	8.33 (4.58)	8.33 (3.20)	6.44 (2.19)	6.78 (2.33)	7.11 (2.47)	8.67 (2.12)	7.01
<b>Moral Dilemma</b> (N=9)	5.89 (4.01)	5.33 (3.20)	4.78 (1.86)	6.44 (3.00)	6.89 (2.37)	6.78 (2.49)	5.44 (2.56)	5.56 (2.07)	5.89 (1.36)	6.67 (3.08)	6.00 (3.32)	6.56 (2.07)	6.02
<b>Total</b>	6.17 (3.07)	5.72 (3.10)	5.72 (2.49)	5.56 (2.70)	6.50 (1.92)	7.61 (2.62)	6.89 (3.89)	6.94 (2.98)	6.17 (1.79)	6.72 (2.65)	6.56 (2.90)	7.61 (2.30)	

Table H. Mean frequency of target children's observed dialogue for 'question' (Standard deviations in brackets)

Intervention age groups / lesson type	Time												
	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10	Time 11	Time 12	Total
<b>Class A</b> (N=6)	2.67 (1.51)	3.83 (1.47)	2.50 (1.05)	2.50 (1.05)	3.67 (1.75)	3.00 (1.55)	3.33 (1.86)	4.17 (1.70)	5.00 (1.79)	4.33 (1.21)	5.00 (1.27)	5.33 (1.51)	3.78
<b>Class B</b> (N=6)	6.33 (2.73)	5.33 (3.45)	5.33 (1.75)	4.67 (2.16)	6.00 (2.10)	6.33 (2.66)	8.00 (2.19)	7.50 (4.68)	7.83 (2.04)	6.17 (1.47)	6.67 (1.63)	6.17 (2.48)	6.36
<b>Class C</b> (N=6)	5.17 (3.92)	4.67 (2.88)	6.00 (1.79)	4.83 (2.14)	6.00 (1.41)	9.67 (3.93)	8.33 (2.88)	8.33 (3.56)	9.00 (2.76)	8.17 (2.23)	10.33 (3.33)	12.33 (4.63)	7.74
<b>The Analects</b> (N=9)	4.67 (3.50)	4.56 (3.61)	5.33 (2.65)	4.67 (2.55)	5.22 (2.05)	7.78 (4.97)	7.33 (4.15)	8.33 (4.30)	6.67 (2.40)	6.33 (2.92)	7.67 (4.18)	9.56 (5.48)	6.51
<b>Moral Dilemma</b> (N=9)	4.78 (2.95)	4.67 (1.32)	3.89 (1.27)	3.33 (1.23)	5.22 (2.11)	4.89 (1.70)	5.78 (1.86)	5.00 (2.24)	7.89 (3.02)	6.11 (1.54)	7.00 (1.73)	6.33 (2.18)	5.41
<b>Total</b>	4.72 (3.14)	4.61 (2.64)	4.61 (2.15)	4.00 (2.06)	5.22 (2.11)	6.33 (3.90)	6.56 (3.22)	6.67 (3.74)	7.28 (2.72)	6.22 (2.26)	7.33 (3.13)	7.94 (4.37)	



Table I. Mean frequency of target children's observed dialogue for teacher's 'involvement' (Standard deviations in brackets)

Intervention age groups		Time											
		Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10	Time 11	Time 12
Class A (N=6)	11.67 (4.50)	9.50 (3.56)	8.67 (1.51)	8.00 (2.10)	7.33 (2.73)	9.33 (2.42)	7.33 (2.07)	9.33 (3.08)	7.33 (3.72)	6.83 (1.72)	7.50 (2.59)	7.17 (2.79)	8.33
	7.33 (2.66)	7.50 (2.88)	8.50 (2.26)	8.33 (1.86)	8.50 (1.05)	10.17 (3.25)	7.00 (0.89)	9.17 (1.94)	7.33 (1.37)	8.00 (2.28)	13.00 (13.37)	8.50 (3.45)	8.61
Class B (N=6)	10.67 (2.66)	12.17 (2.14)	7.33 (1.51)	10.50 (3.99)	9.17 (1.84)	8.00 (4.60)	7.33 (4.08)	7.67 (3.27)	3.33 (4.08)	2.33 (2.73)	0 (0.00)	0 (0.00)	6.54
	9.89 (3.71)	9.72 (3.38)	8.17 (1.79)	8.94 (2.88)	8.33 (2.03)	9.17 (3.45)	7.22 (2.53)	8.72 (2.76)	6.00 (3.65)	5.72 (3.30)	6.83 (9.20)	5.22 (4.53)	