The Application of M-Learning & Knowledge Management in the Grade 1-9 Curriculum

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Abstract: The Study of this research is to realize the study of applying m-learning and knowledge management in the Grade 1-9 curriculum, and viewpoints of the related questions of the Grade 1-9 curriculum, and to offer the practical suggestions. There are “questionnaire” and “interview” involved in this study. The public elementary school teachers in Kaohsiung city are the main objects in this research. After arranging these data, we obtain some suggestions from the findings of this study. Actually, the main conclusions of the study are as follows:

1. Most of the elementary school teachers tend to stand for the state enforcement of the Grade1-9 curriculum.
2. There is a significantly different level among these items (sexuality, age and position in school) in the understanding of the theory of the Grade1-9 curriculum of the elementary school teachers.
3. There is a significantly different level at the item (total classes in school) in the understanding of the concept of the Grade1-9 curriculum of the elementary school teachers.
4. There is a significantly different level among these items (sexuality, highest diploma and total classes in school) in the understanding of the curriculum innovation of the Grade1-9 curriculum of the elementary school teachers.
5. There is a significantly different level at the item (different background) in the thoughts of the elementary school teachers on forming a complete set and the attitude towards reform.
6. There is a different level at the item (different background) in the current executive situation of the Grade1-9 curriculum of the elementary school teachers.

Finally, according to the conclusions of the study, we hope to offer some suggestions for teacher-training institutions, educational authority, and administrators of elementary school, elementary school teachers and the future research.

Keywords: elementary school teacher, Grade1-9 curriculum, curriculum innovation.

1 Beginning

Nowadays, many teachers and social populace have some variance about the state implementation of Grade1-9 curriculum, because of policy formulation department from top to bottom and insufficient basic level participation. This research will explore elementary teachers in the state enforcement of Grade1-9 curriculum and the understanding of the content. One of the research motives is to analyze the influence in curriculum reform.

Furthermore, the researchers will comprehend the state implementation of Grade1-9 curriculum from administrators of elementary school and elementary school teachers to inquire into how aims at the above questions, and from knowledge obtainment, share and innovation to give solvable comment and suggestions.

2 Content and features of Grade1-9 curriculum
The main features of Grade1-9 curriculum:
2.1 “Ability standard” substitutes for traditional “discipline standard” in the curriculum plan design
The former curriculum standard focuses on subjects primarily by separating fields to teach. There are some limits between subjects. We only stress on knowledge instilling for entering a higher school and reciting like machines. We ignore the integration of the development of students’ body, mind and their life experience, so their learning becomes fragmentally uncompleted and disconnects with lives. The Grade1-9 curriculum substitutes “Grade 1-9 Curriculum Guidelines” for “curriculum standard”. We give the right of curriculum development to schools and teachers. It not only promotes teachers’ expertise, but also embodies schools’ flexibly independent space.

2.2 Stress school-based curriculum development and curriculum integration, and respect teachers’ expertise
The design and decision of the former curriculum focus on national consistent standard. Thus, we lack local, aboriginal curriculum and teaching materials, but they can’t connect with social environment. The statements of Grade1-9 curriculum program replace “Centralization” with “School-based Curriculum Development", and respect teachers’ expertise, give them more flexible independent space, and make this curriculum conform students’ needs. However, in current curriculum reform, other fields emphasize on “Integrated Curriculum,” that is, to integrate each subject or area horizontal structure, not vertical “Grade1-9 curriculum.” In new curriculum guidelines experienced schools, teachers often regard integrated curriculum as the contact teaching of correlated curriculum, or just combine teaching content into fusion curriculum and broad-field curriculum, so it will become a formality and neglect the substance. However, as far as current enforcement situation is concerned, the curriculum which tends to the integrated curriculum is harder to make reform, and the coordination of supplementary measure and education values is not easier. [1,2,3]

Fig 1. Jacobs Curriculum plan spectral analysis data resource: Jacobs, 1998 quoted from the new thoughts in Grade1-9 curriculum (page13). [1,4,5,6]

3 Difficulties of the enforcement
Facing questions and criticism from outward fields, the enforcement of Grade1-9 curriculum suffers lots of difficulties and problems. [7]

3.1 Integrated common sense should be established.
Although many scholars in America agree to regard students’ life experience as the core and adopte subject-united design method, they offer so many claims that they can’t get the conclusion. Therefore, the problem of Grade1-9 curriculum integration has different thoughts. It’s worth to be emphasized by educational authority.

3.2 Edition and censorship of textbooks should be emphasized.
About textbook, some of its responsibilities should be accepted by public publishing houses. Trying to think about seven learning areas, nine-year teaching materials, teachers’ textbooks, teaching aids and so on, we need hundreds of people who understand the idea of this new curriculum to edit. Moreover, to examine textbooks is a hard job. Teachers don’t have enough time to select and familiarize teaching materials. Thus, it causes disunion semesters and can’t connect smoothly. The problem of textbooks can’t be ignored.

3.3 Training teachers system should be discussed.
Besides, training teachers system is also concerned and worried by each field. Because every curriculum reform should need enough qualified teachers, it can likely succeed.

3.4 Teachers’ resistible attitude is worth to notice.
Generally, “used to recent situation, resist reform” can be the mental inclination of most people. As far as elementary school teachers are concerned, they are lonely fighting for a long time, so sometimes it will become an independent kingdom. Over a long period of time, it will form so-called isolated “teaching culture.” In other words, how to decrease basic level teachers who resist this curriculum reform and then we can get their support and agreement. Educational authority should pay more attention to it.

3.5 Teachers’ knowledge management should be advanced.
Students’ learning not only gets lesson knowledge, but also educates life abilities. Thus, teachers apply the idea of knowledge management to expertise, skill learning, share, application, innovation, and establish the partner relationship with community and students’ parents. By cooperation, they give teachers latest expertise, skills, and shortcut to master social trend to promote teaching quality.

4 The structure of knowledge management
Many scholars examine in different points of view on the structure of knowledge management, so there are different statements. As a whole, knowledge management will eliminate old knowledge and be replaced by new one. New knowledge should be collected, shared, applied, and innovated. Hence, the structure of knowledge management can divide into four dimensions, including knowledge obtainment, share, application, and innovation. [8,9,10] As follows:

4.1 knowledge obtainment
Knowledge obtainment is the core of knowledge management. Thanks to information technology development, the rate of renewing knowledge is extremely rapid. If a person or an organization never builds an obtaining knowledge mechanism from outside, they will be exceeded by competitors rapidly. To obtain knowledge can increase the attached values of personal property. Nevertheless, if not obtaining knowledge continually, people will solve problems in a single thinking model.

4.2 knowledge share
Knowledge share is a community. Knowledge is not like commodity which can be transmitted freely. When we learn knowledge from others, it’s time to share others knowledge.

4.3 knowledge application
To organize intellectual property accumulation is not only in knowledge obtainment, share, and innovation, it’s better in application to build business center abilities to get the most benefit. Hence, knowledge application is to use former accumulated knowledge to solve present and future problems. [11,12,13]

4.4 knowledge innovation
In conclusion, the idea of enforcing knowledge management is through knowledge obtainment, share, application, and innovation to command members’ knowledge, increase organization’s wisdom, and establish advantaged competition. The procedure (as picture 2) is a double return circle which will be different due to organization, personal knowledge development.

![Flowchart of knowledge management](image)

Consequently, knowledge is the information that passes through process. It is also the key element to show personal and organized special values. If we don’t manage knowledge systematically, along with the knowledge accumulation, it will gradually become fragments and hasten fuzzily, and be forgotten at the end.

5 Reason of the research
According to above research motives, the purposes of the research are as following:
A. To discuss the opinions of elementary school teachers about the present implementation and results in Grade1-9 curriculum.
B. To discuss the opinions of elementary school teachers about the enforcement problems in Grade1-9 curriculum.
C. In view of the findings, from the content structure of knowledge management, we provide improvement and suggestions to promote effects of implementation in Grade1-9 curriculum.

6 Means of the research
This research adopts the documentary analysis, questionnaire, and interviewing method.

6.1 research object
6.1.1Questionnaire
This research takes Kaohsiung public elementary school teachers to be the population, including administrators (contains director, section chief), class teachers, subject teachers. We totally send out 770 questionnaires, and recycle 638 questionnaires. The return-ratio reaches 83%. Removing 7 invalid questionnaires, we get effective 631 questionnaires. The effective return-ratio reaches 82%. It conforms to Krejcie & Morgan (1,970) sampling line. (quoted from Huang, Hsiao-Lin, 1998).
6.1.2 Interviewing method
This research takes Kaohsiung public elementary school teachers to be the population, including administrators (contains director, section chief), class teachers, subject teachers. The total 15 teachers accept interviewing.

6.2 Research implement
After this research firstly makes the documentary analysis discussion, we carry on the draft of research structure and refer to “questionnaires in Grade1-9 curriculum for elementary school teachers” to edit our questionnaires.

7 Data analysis and discussion
7.1 Questionnaires results for elementary school teachers about the attitude of Grade1-9 curriculum reform.

Table 2 Chi-square test of “enforcement of Grade1-9 curriculum causes student studies degree reduced”

<table>
<thead>
<tr>
<th>Background</th>
<th>group</th>
<th>extremely agree</th>
<th>partly agree</th>
<th>partly disagree</th>
<th>extremely disagree</th>
<th>total</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pop</td>
<td>%</td>
<td>pop</td>
<td>%</td>
<td>pop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole</td>
<td>178</td>
<td>28.2</td>
<td>304</td>
<td>48.2</td>
<td>116</td>
<td>18.4</td>
<td>53</td>
</tr>
<tr>
<td>Gender</td>
<td>male</td>
<td>42.5</td>
<td>90</td>
<td>53.9</td>
<td>29</td>
<td>17.4</td>
<td>6</td>
</tr>
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<td>136</td>
<td>29.4</td>
<td>46.1</td>
<td>87</td>
<td>18.8</td>
<td>27</td>
</tr>
<tr>
<td>age</td>
<td>31~40</td>
<td>58</td>
<td>33.7</td>
<td>83</td>
<td>48.3</td>
<td>27</td>
<td>15.3</td>
</tr>
<tr>
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<td>58</td>
<td>31.7</td>
<td>84.3</td>
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<td>15.3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>above 31</td>
<td>15</td>
<td>50.0</td>
<td>60</td>
<td>39.5</td>
<td>24.4</td>
<td>11</td>
</tr>
<tr>
<td>Service year</td>
<td>11~20</td>
<td>47</td>
<td>30.9</td>
<td>60</td>
<td>39.5</td>
<td>24.4</td>
<td>11</td>
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<td>21~30</td>
<td>36</td>
<td>33.3</td>
<td>50</td>
<td>39.7</td>
<td>23.0</td>
<td>5</td>
</tr>
<tr>
<td>school history</td>
<td>above 11</td>
<td>9</td>
<td>40.9</td>
<td>11</td>
<td>50.0</td>
<td>2.9</td>
<td>0</td>
</tr>
</tbody>
</table>

*p<.05  **p<.01  ***p<.001  Pop = population

Among service above 31 years class teachers, school classes above 25 classes, and school history above 11 years teachers, their agreement percentage is higher than other background conditions teachers.

Table 3 Chi-square test of “enforce teachers classification system to promote teachers professional growth”

<table>
<thead>
<tr>
<th>Background</th>
<th>group</th>
<th>extremely agree</th>
<th>partly agree</th>
<th>partly disagree</th>
<th>extremely disagree</th>
<th>total</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pop</td>
<td>%</td>
<td>pop</td>
<td>%</td>
<td>pop</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>21.1</td>
<td>342</td>
<td>54.2</td>
<td>132</td>
<td>20.9</td>
<td>24</td>
</tr>
<tr>
<td>school classes</td>
<td>under 24</td>
<td>26</td>
<td>22.2</td>
<td>70</td>
<td>39.8</td>
<td>19</td>
<td>16.2</td>
</tr>
<tr>
<td></td>
<td>above 25~59</td>
<td>56</td>
<td>31.7</td>
<td>173</td>
<td>32.9</td>
<td>81</td>
<td>24.8</td>
</tr>
<tr>
<td></td>
<td>above 59</td>
<td>51</td>
<td>27.3</td>
<td>99</td>
<td>52.9</td>
<td>32</td>
<td>17.1</td>
</tr>
</tbody>
</table>

*p<.05

For each level, most teachers have positive attitude of Grade1-9 curriculum reform. However, because of subjects with different backgrounds, they have different thoughts in each question. Except for variables of age and school history backgrounds, they don’t have significant difference in most questions. For other variables of duty-serving and school class backgrounds, they have significant difference in some parts of questions.

7.2 Results of elementary school teachers for the state enforcement in Grade1-9 curriculum.

Table 4 Chi-square test of “curriculum development committee and learning area curriculum group can display their function”

<table>
<thead>
<tr>
<th>background</th>
<th>group</th>
<th>extremely agree</th>
<th>partly agree</th>
<th>partly disagree</th>
<th>extremely disagree</th>
<th>total</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>pop</td>
<td></td>
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<td>38.5</td>
<td>94</td>
<td>14.9</td>
<td>10</td>
</tr>
<tr>
<td>Gender</td>
<td>male</td>
<td>203</td>
<td>43.8</td>
<td>187</td>
<td>40.3</td>
<td>67</td>
<td>14.4</td>
</tr>
<tr>
<td>Service year</td>
<td>below 10</td>
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<td>36.2</td>
<td>120</td>
<td>42.6</td>
<td>54</td>
<td>19.1</td>
</tr>
<tr>
<td></td>
<td>11~20</td>
<td>104</td>
<td>51.7</td>
<td>75</td>
<td>37.3</td>
<td>20</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>21~30</td>
<td>67</td>
<td>53.2</td>
<td>39</td>
<td>31.0</td>
<td>19</td>
<td>15.1</td>
</tr>
<tr>
<td></td>
<td>above 31</td>
<td>11</td>
<td>50.0</td>
<td>9</td>
<td>40.9</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>duty-serving</td>
<td>administrator</td>
<td>59</td>
<td>44.0</td>
<td>44</td>
<td>32.8</td>
<td>27</td>
<td>20.1</td>
</tr>
<tr>
<td></td>
<td>class teachers</td>
<td>195</td>
<td>47.0</td>
<td>163</td>
<td>39.1</td>
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<td>15.0</td>
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<tr>
<td></td>
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<td>36</td>
<td>45.9</td>
<td>15</td>
<td>13.9</td>
</tr>
<tr>
<td>school classes</td>
<td>under 24</td>
<td>36</td>
<td>30.8</td>
<td>55</td>
<td>47.0</td>
<td>22</td>
<td>18.8</td>
</tr>
<tr>
<td></td>
<td>25~59</td>
<td>162</td>
<td>49.5</td>
<td>116</td>
<td>35.5</td>
<td>45</td>
<td>13.8</td>
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<tr>
<td></td>
<td>above 60</td>
<td>86</td>
<td>46.0</td>
<td>72</td>
<td>38.5</td>
<td>25</td>
<td>14.4</td>
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<td>under 10</td>
<td>4</td>
<td>9.8</td>
<td>18</td>
<td>43.9</td>
<td>14</td>
<td>34.1</td>
</tr>
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<td>11~20</td>
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<td>277</td>
<td>47.7</td>
<td>227</td>
<td>38.0</td>
<td>78</td>
<td>13.4</td>
</tr>
</tbody>
</table>

*p<.05

In age variable, teachers under 30 years old and above 51 years old, their agreement percentage is higher than other background conditions teachers.

In age variable, teachers under 30 years old and above 51 years old, their agreement percentage is higher than other background conditions teachers. In service year variable, the servicing year, teachers above 31 years, their agreement percentage is higher than other background conditions teachers.

Table 5 Chi-square test of “school can flexibly adjust semester week numbers, minutes of each class, and combination with grades and classes due to curriculum demand”

<table>
<thead>
<tr>
<th>background</th>
<th>group</th>
<th>extremely agree</th>
<th>partly agree</th>
<th>partly disagree</th>
<th>extremely disagree</th>
<th>total</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pop</td>
<td>%</td>
<td>pop</td>
<td>%</td>
<td>pop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>whole</td>
<td>415</td>
<td>16.3</td>
<td>243</td>
<td>38.5</td>
<td>188</td>
<td>29.8</td>
<td>95</td>
</tr>
<tr>
<td>gender</td>
<td>male</td>
<td>35.0</td>
<td>21.0</td>
<td>69</td>
<td>41.2</td>
<td>56</td>
<td>21.9</td>
</tr>
<tr>
<td></td>
<td>female</td>
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<td>174</td>
<td>37.5</td>
<td>152</td>
<td>32.8</td>
</tr>
<tr>
<td>duty-serving</td>
<td>administrator</td>
<td>25</td>
<td>18.7</td>
<td>62</td>
<td>46.3</td>
<td>31</td>
<td>23.1</td>
</tr>
<tr>
<td></td>
<td>class teachers</td>
<td>64</td>
<td>15.4</td>
<td>147</td>
<td>35.4</td>
<td>150</td>
<td>31.3</td>
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<td></td>
<td>subject teachers</td>
<td>16</td>
<td>19.5</td>
<td>35</td>
<td>41.5</td>
<td>27</td>
<td>32.9</td>
</tr>
</tbody>
</table>

*p<.05

In age variable, teachers under 30 years old and above 51 years old, their agreement percentage is higher than other background conditions teachers. In service year variable, the servicing year, teachers above 31 years, their agreement percentage is higher than other background conditions teachers.

Table 6 Chi-square test of “school firmly melt six purposes, including gender, environment, information technology, home economics, human right, career
In age variable, the opinion difference reaches .001 significance level, and 41-50 year-old teachers, their agreement percentage is higher than other background conditions teachers. In school class variable, the opinion difference reaches .001 significance level, and above 60 classes teachers, their agreement percentage is higher than other background conditions teachers.

**Table 7 Chi-square test of “school curriculum formulation and teaching activity, and emphasize team cooperation and team teaching”**

<table>
<thead>
<tr>
<th>Background group</th>
<th>extremely agree</th>
<th>partly agree</th>
<th>partly disagree</th>
<th>extremely disagree</th>
<th>total</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole</td>
<td>260</td>
<td>41.2%</td>
<td>308</td>
<td>48.8%</td>
<td>56</td>
<td>8.9%</td>
</tr>
<tr>
<td>below 30</td>
<td>71</td>
<td>41.3%</td>
<td>83</td>
<td>48.8%</td>
<td>18</td>
<td>10.5%</td>
</tr>
<tr>
<td>age</td>
<td>96</td>
<td>35.7%</td>
<td>148</td>
<td>55.0%</td>
<td>19</td>
<td>7.1%</td>
</tr>
<tr>
<td>31-40</td>
<td>73</td>
<td>48.0%</td>
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<td>above 51</td>
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<td>63</td>
<td>47.0%</td>
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<td>12.7%</td>
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<tr>
<td>Duty administrator</td>
<td>176</td>
<td>42.4%</td>
<td>203</td>
<td>48.9%</td>
<td>35</td>
<td>8.4%</td>
</tr>
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<td>51.2%</td>
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<td>4.9%</td>
</tr>
<tr>
<td>school under 24</td>
<td>44</td>
<td>37.6%</td>
<td>62</td>
<td>53.0%</td>
<td>10</td>
<td>8.5%</td>
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<tr>
<td>above 60</td>
<td>125</td>
<td>38.2%</td>
<td>175</td>
<td>53.5%</td>
<td>25</td>
<td>7.6%</td>
</tr>
</tbody>
</table>

**Table 8 Chi-square test of “school teachers firmly adopt multiple methods to evaluate student achievement”**

<table>
<thead>
<tr>
<th>Background group</th>
<th>extremely agree</th>
<th>partly agree</th>
<th>partly disagree</th>
<th>extremely disagree</th>
<th>total</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
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<td>166</td>
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<td>school under 24</td>
<td>19</td>
<td>16.2%</td>
<td>80</td>
<td>68.4%</td>
<td>18</td>
<td>15.4%</td>
</tr>
<tr>
<td>above 60</td>
<td>71</td>
<td>38.0%</td>
<td>36</td>
<td>48.7%</td>
<td>38</td>
<td>20.3%</td>
</tr>
</tbody>
</table>

In age variable, the opinion difference reaches .05 significance level, teachers in small schools under 24 classes, their extremely agreement percentage is higher than middle and large schools teachers.

**Table 9 Chi-square test of “schools firmly can put staff members, students parents, community public,and experts into curriculum development committee”**

<table>
<thead>
<tr>
<th>Background group</th>
<th>extremely agree</th>
<th>partly agree</th>
<th>partly disagree</th>
<th>extremely disagree</th>
<th>total</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole</td>
<td>216</td>
<td>34.2%</td>
<td>358</td>
<td>56.7%</td>
<td>54</td>
<td>8.6%</td>
</tr>
<tr>
<td>school under 24</td>
<td>35</td>
<td>29.9%</td>
<td>72</td>
<td>61.5%</td>
<td>10</td>
<td>8.5%</td>
</tr>
<tr>
<td>school above 60</td>
<td>82</td>
<td>43.9%</td>
<td>84</td>
<td>44.9%</td>
<td>20</td>
<td>10.7%</td>
</tr>
</tbody>
</table>

In age variable, 31-40 year-old teachers and 41-50 year-old teachers, their agreement percentage are higher than other background conditions teachers. In school class variable, teachers in large schools above 60 classes, their extremely agreement percentage is higher than other background conditions teachers.
8. Summary of interviewing
We interview elementary school teachers on the spot about the enforcement of Grade 1-9 curriculum to redeem questionnaire which leads them in another explanations due to the content of questions limits.

A. Problems and state enforcement of Grade 1-9 curriculum
From interviewing, we understand most teachers (including directors) think the main idea of Grade 1-9 curriculum is to develop students basic competencies which focus on inculturatio, internationalization, lively and vivid content, and diversification. It’s the positive fact, but they suffer following difficulties and obstruction in enforcement.

1. Grade 1-9 curriculum can’t guide adequately, so teachers, students parents, and all society don’t have common sense. (Teacher A 911224)

2. It’s a good idea for each purpose infusing into curriculum, but too many purposes will cause curriculum failure to explore deeply. (Teacher B 920102)

3. Teaching hours of some curriculum decline sharply, so teachers can’t be firm in curriculum. (Teacher D 920103)

4. We lack of area expertise teachers on teaching. (Teacher C 920102)

5. There is a different thought between policy of educational authority and locale teachers.

6. It’s too slow in examining textbooks. (Teacher H 920302) (Teacher K 9250320)

7. Educational authority emphasize on surface and instant effects, neglecting the help for teachers. (Teacher A 911224) (Teacher G 920225)

B. Opinions of Grade 1-9 curriculum related advanced courses activity
Teachers are in the first line in enforcement of Grade 1-9 curriculum, so they have the most important responsibility. Teachers not only comprehend their own curriculum, but also control the connection with each subjects. Hence, by related advanced courses, it’s quite important to advance teachers professional capability and promote teachers professional development. From interviewing, we generalize to know that teachers have following opinions and suggestions:

1. We don’t have enough advanced courses activity hours, so it’s hard to advance teachers professional capability. (Teacher A 教師 911224) (Teacher M 920329)

2. Most teachers think advanced courses activity is fragmentary, lacks of feedback and share communicative system. It’ll influence the effects of advanced courses. (Teacher D 920103) (Teacher J 920315)

3. During the period of advanced courses, teachers have to handle classes by themselves, so they have less willingness to join. (Teacher H 920302)

C. Opinions of School-based Curriculum Development and Curriculum Integration
Most teachers think School-based Curriculum Development and Curriculum Integration need a team work of teaching and administrative staff. Integrated curriculum can develop students completed learning. But some teachers think it has to cooperate with a sound curriculum evaluation, and then we can examine this curriculum whether its practicability and effectiveness or not. Not to intergrate because we want to do so. (Teacher A 911224) (Teacher D 920103) (Teacher I 920310) (Teacher L 920322)

D. Opinions of Grade 1-9 curriculum with cooperating measures
When Grade 1-9 curriculum implements until now, it causes lots of problems. It needs national, local, and related institutions to offer assistant cooperating measures. In interviewing, sample teachers have four opinions and suggestions about scarce cooperating measures after enforcing Grade 1-9 curriculum.

1. Offer enough time to design curriculum development and get ready to teach. (Teacher C 920102) (Teacher E 920118)
2. Form consultation units to offer consultation service when teachers meet problems and difficulties. (Teacher A 911224)

3. Promote the coordinating function between administration and teaching, and lighten teachers’ administrative position. (Teacher E 920212)

4. Edition of “Competence Indicators” can be divided by grades, not by sections. It’ll be convenient to teach. (Teacher K 920320)

E. Opinions of Grade 1-9 curriculum plan
From interviewing, we know teachers think curriculum plan is their responsibility. Because teachers are the executors and stimuli in teaching field, they understand students’ needs very clearly. Planning curriculum by themselves can benefit evaluation of learning effects and examination of teaching goals. But some teachers think both of us have this responsibility. Administration has to support teaching, and offer necessary help and service to advance teaching quality, and to build a high quality environment. (Teacher A 911224) (Teacher C 920102) (Teacher E 920118) (Teacher K 920320)

9 Conclusions
9.1 Most elementary school teachers understand the idea spirit of Grade 1-9 curriculum.
From this research, we find that teachers understand reform idea, core competence, and learning areas to reach over ninety percentage. It demonstrates that most elementary school teachers understand the idea spirit of Grade 1-9 curriculum and they have the high uniformity. To femininity whose age below 30 years old, and being administrators elementary school teachers, they have higher understanding about the idea spirit of Grade 1-9 curriculum than other background conditions teachers.

9.2 Most elementary school teachers understand the curriculum guidelines of Grade 1-9 curriculum.
From this research, we find that elementary school teachers understand the idea spirit and meaning of the organization functions of "curriculum development committee" and "learning area group" in Grade 1-9 curriculum, school-based curriculum, and they integrate curriculum. Their percentage reaches above 85%. It means that most elementary school teachers have already understood the curriculum guidelines of Grade 1-9 curriculum, and they have high uniformity. The teachers whose age below 30 year-old have higher understanding about the curriculum guidelines of Grade 1-9 curriculum than other background conditions teachers.

9.3 Most elementary school teachers understand the curriculum reform of Grade 1-9 curriculum.
From this research, we find that elementary school teachers understand the curriculum reform of Grade 1-9 curriculum, and its percentage reaches above 80%. It means that most elementary school teachers understand the curriculum reform of Grade 1-9 curriculum and they have high uniformity. To femininity who own graduate school educational background, and being large school above 60 classes elementary school teachers, they have higher understanding about the curriculum reform of Grade 1-9 curriculum than other background conditions teachers.

9.4 Except engaging in the teaching preparatory time, most elementary school teachers agree the cooperating measures of Grade 1-9 curriculum.
From this research, we find that most elementary school teachers agree the cooperating measures of Grade 1-9 curriculum. Except at present related advanced courses activities can let them be equal to curriculum reform, only a half of teachers hold positive thoughts. Besides, we have enough time to engage in the preparatory teaching after enforcing Grade 1-9 curriculum. It means that most elementary school teachers understand the cooperating measures of Grade 1-9 curriculum and they have high uniformity. Because of different backgrounds, they have different opinions. Female teachers think that the percentage of present related advanced courses activity which can let them be equal to curriculum reform is higher than male teachers. Younger teachers worried about the scarce time of preparing lessons are more than elder teachers. Teachers who own graduate school educational background agree that when enforcing curriculum evaluation, it can evaluate teachers’ teaching at the same time.

9.5 Except the question of dialects edited into official curriculum, most elementary school teachers agree the curriculum reform of Grade 1-9 curriculum.
From this research, we find that elementary school teachers have the reform attitude of Grade 1-9 curriculum.
curriculum. Except the questions of representable curriculum development committee, enforcing integrated curriculum causes students’ burden in schoolwork, but most teachers hold positive thoughts. Only in the question of editing dialects into official curriculum, there are about half of teachers who are disagree. It means that most elementary school teachers agree the curriculum reform of Grade1-9 curriculum and they have high uniformity.

9. 6 Most elementary school teachers agree the state enforcement of Grade1-9 curriculum. From this research, we find that elementary school teachers agree the state enforcement of Grade1-9 curriculum, they cultivate students ten core competences, and develop the functions of "curriculum development committee" and "each learning area group". According to the needs of curriculum, we can flexibly adjust weeks of each semester, minutes of each class, and combination of classes and grades. In the questions of representable curriculum development committee, they hold more positive thoughts. It means that most elementary school teachers agree the state enforcement of Grade1-9 curriculum and they have high uniformity.

10. Suggestions:
A. For teacher-training institutions

1. Adjust the knowledge management education curriculum to implement the combination of area courses and integrated curriculum. Students does not have departmentalism to cultivate the needy teachers in Grade1-9 curriculum all areas.

2. In accordance to Grade1-9 curriculum comprehensive implementation, each normal university should cultivate the elementary school and junior high school common teachers to deeply understand the meaning of Grade1-9 curriculum to achieve elementary school and junior high school teachers who can adjust commonly.

3. Educational authority holds theoretical and practical advanced courses activity to reconstruct teachers specialty and self-confidence to promote the results of curriculum reform.

B. For educational authority

1. By guidance, share Grade1-9 curriculum related knowledge and meaning with communities and students parents.

According to this research, it indicates that elementary school teachers think in this Grade1-9 curriculum reform, the guidance for students parents is not enough, so educational authority should add the guidance more.

2. Form the standing curriculum reforms committee, carrying on curriculum reform continually.

Educational authority should form the standing curriculum development committee to share Grade1-9 curriculum knowledge with teachers, experts, and folk academic groups.

3. Apply Grade1-9 curriculum related knowledge to reform high schools and vocational schools together to achieve the curriculum linking function.

This research results show that most elementary school teachers think after Grade1-9 curriculum entire enforcement, our high schools and vocational schools curriculum should be reformed at the same time to achieve the curriculum linking function. Therefore, educational authority can consider to lengthen nine-year compulsory education into twelve-year compulsory education, so it can solve the linking problem, and avoid the pressure of elevating to enter a higher school education. However, the meaning and spirit of Grade1-9 curriculum can be achieved earlier.

4. Remodel correlated laws to cause Grade1-9 curriculum impetus with an ideal environment.

a. This research results show that most elementary school teachers think they don’t have much time to prepare teaching and evaluation, so educational authority should rapidly improve every week teaching hours, and considers to pull closer the personnel framing standard of teachers and administrative staff in junior high schools and elementary school and strengthens the speed of textbook verification to give elementary school teachers more time to prepare teaching work.

b. About examination and selectione of textbooks, educational authority should plan the well-done rules to improve content repetition in different editions and make each subject content link and integrate when schools selecting.

5. Hold the curriculum plan practical advanced courses activity and enforce appropriate teaching evaluation to promote the innovation and the growth teachers
specialized knowledge.

a. The educational administrative institution should first investigate the demand of the teacher curriculum, and hold practical and continuous advanced courses activity. Except causing teachers to obtain the latest Grade1-9 curriculum information, they can observe and encourage with each other to advance specialized knowledge in Grade1-9 curriculum.

b. Establish the appropriate teaching evaluation, through this evaluation, we can correct the flaws in teaching and enhance high teaching quality.

c. Dialects infusing into the formal curriculum should be studied deeply.

According to this research, it indicates that elementary school teachers hold hesitant attitude about dialects infusing into the formal curriculum. Except dialects phonetics not yet unified, students’ city and countryside disparity is also the important attribute, so educational authority should discuss carefully and thoroughly. After that, if they think it’s necessary indeed, they should adopt suitable implementation, strengthened the guidance, let teachers, students parents, and students accept to lift efficiency.

6. Plan applied knowledge management related reward feedback measure

For elementary school teachers, carrying on the knowledge share is passive. If educational authority or school administration authority don’t provided the moderate inducement for knowledge share, and innovation behavior, teachers will tend to lowly on the knowledge share and the innovation motive. Furthermore, the knowledge has "sharing", in the sharing process, the connotation will be enriched by the circulation of unceasing feedback.

C. For administrators of elementary school

1. Encourage teachers refreshing course of occupation and provide multiple ways.

Schools should encourage teachers to join practical advance courses, and use this time to hold the teaching demonstration this kind of advance courses. They can share what they learn with each other, and enable teachers to absorb the recent information and the skills, in order to provide more assistance for Grade1-9 curriculum implementation.

2. Establish school teaching resources network to promote elementary school teachers using computers to benefit knowledge share.

Schools should not only encourage teachers to cooperate the curriculum development and the teaching activities, research each kind of teaching resources, assist to establish the teaching resources network, establish the database, and carry on the knowledge management, but also school teachers can discuss commonly to share resources in order to reduce the time to find out. Teachers who don’t understand Grade1-9 curriculum deeply, they can enrich their own knowledge by this channel.

3. Plan teaching group system, fulfill knowledge management structure

Different teachers have different specialized backgrounds, different students have different potential display space. How school administrators plan appropriately depends on teaching groups in accordance with each school year curriculum goals. To form the highest quality team which takes advantage to complement deficiency is the most important consideration factor in the administrative plan.

4. Promote administration an appropriately assistant environment

Whether Grade1-9 curriculum enforcement succeed or not, teachers are the key point. Consequitely, administrators have to plan an appropriate assistance. For instance, to redesign teaching hours and space, to expand teaching resources and equipment, to improve learning environment, and so on, these can make teachers heartily display on their post, by their best potential to assist schoolchild obtaining the best learning benefit.

5. Plan teaching preparatory work time and space

According to this research, it indicates that although most teachers agree Grade1-9 curriculum with cooperating measures. However, for teaching preparatory work time, most teachers think it’s not enough and it’ll obstruct the impetus of Grade1-9 curriculum. Hence, school administrations may adopt following measures:

a. Plan teachers a teaching preparatory room to discuss related curriculum or teaching skills.

b. Decide textbook editions earlier to let teachers understand teaching materials and help students achieve competence indicators of each learning area and some competence indicators of six purposes
c. Plans school years and each area teachers’ common spatial time to cooperate with each other, participate in discussion. It’ll benefit the team teaching.

D. For elementary school teachers

1. Fulfill Grade 1-9 curriculum knowledge
   This research shows that parts of teachers don’t understand Grade 1-9 curriculum knowledge insufficiently, so in order to develop Grade 1-9 curriculum plan to the best, teachers participate in each kind of advanced courses and absorb new knowledge to strengthen the related knowledge through each kind of growth channels.

2. Strengthen team teaching skills; share what we learn with each other
   This research shows that teachers already understand Grade 1-9 curriculum with cooperating measures. Thus, how to strengthen team teaching skills to display individual specialty, and develop schoolchild multiple potentials is the goal for teachers to strive.

3. Promote teachers specialized development, strengthen the research and innovation of curriculum
   The goal of Grade 1-9 curriculum implementation is to expect teachers to have educational specialty and curriculum accomplishments. Through each kind of channels, teachers strengthen their own education specialized knowledge and strengthen abilities of curriculum plan and research development. To make teachers truly possess the specialized education should be all teachers’ goal.

4. Implement preparatory teaching work, apply related knowledge of Grade 1-9 curriculum
   a. Advance our own expertise and participate in discussion eagerly.
   b. Be familiar with the content of Grade 1-9 curriculum, strengthen implementation potency.
   c. Implement preparatory teaching work and discussion, promote teaching effectiveness.

References:
