# LEVEL OF KNOWLEDGE ON GLOBAL CITIZENSHIP EDUCATION OF TEACHERS OF PUBLIC ELEMENTARY SCHOOLS MALASIQUI II DISTRICT

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## Abstract

This study sought to determine the level of knowledge on global citizenship education of the teachers of public elementary schools in Malasiqui II District during the School Year 2025-2026through a quantitative-descriptive-correlational research design.

The data used in this study came from the 183 teachers and 26 school heads which were subjected to frequency count, percentage, weighted mean, t-test and the chi-square test of independence. Results showed that: majority of the primary grade teachers have no post-graduate degrees, have been teaching for more than 15 years already, and have attended not more than three trainings/seminars related with global citizenship education for the past five years; in general, the teachers perceived that they have advanced level of knowledge on global citizenship education as evidenced by the computed overall weighted mean of 3.98 while their school heads perceived that they only have competent level of knowledge as evidenced by the computed area weighted mean of 3.17; there is a significant difference between the perceptions of the teachers and the school heads on the level of knowledge on global citizenship education of the teachers; and, there is a significant relationship between the length of teaching experience and the number of relevant trainings attended of the teachers and the level of their knowledge on global citizenship education. Given the findings, the following conclusions were drawn: a typical teacher of public elementary schools in Malasiqui II District has no post-graduate degree, has been teaching for more than 15 years already, and has attended not more than three trainings related with global citizenship education for the past five years; the teachers of public elementary schools in Malasiqui II District perceived that they have advanced level of knowledge on global citizenship education but their school heads perceived that they only competent level of knowledge on global citizenship; the perceptions of the teachers and the school heads on the level of knowledge on global citizenship education of the teachers significantly different from each other; and, the level of knowledge on global citizenship education of the teachers is influenced their length of teaching experience and the number of relevant trainings they attended.

## Introduction

The rapid shifts within the global economy demand educational systems that equip students with 21st-century skills, critical for thriving in an era characterized by creativity and technological advancement. As educational institutions prepare students for the modern workforce, they are increasingly tasked with fostering skills like critical thinking, problem-solving, and digital literacy (Martinez, 2022). Education systems worldwide are aligning with frameworks such as the Sustainable Development Goals (SDGs), highlighting the need for sustainable, quality education (Tilbury, 2016). In the Philippines, the Enhanced Basic Education Act of 2013 is a significant legislative step in this direction, aiming to develop a comprehensive, globally competitive education system that prepares



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learners for future career opportunities and lifelong learning (Republic Act No. 10533, 2013). Teachers play a vital role in this mission, as they are responsible for integrating these essential skills within classroom environments through innovative pedagogical strategies.

However, several challenges persist in equipping educators with the necessary resources and training to teach 21st-century skills effectively. Studies suggest that many teachers struggle with the selection and integration of technology and innovative practices that foster these skills in students (Chen, 2021). Moreover, the pace of technological change and evolving career demands create uncertainties around the long-term effectiveness of traditional teaching methods. In the Philippines, issues such as limited professional development opportunities, insufficient resources, and varying levels of preparedness among teachers further complicate the implementation of 21st-century teaching skills (Balisacan, 2013). Additionally, while there is an increasing emphasis on education for sustainability and digital competency, many schools lack the framework to evaluate and enhance these skills among their educators systematically.

In response to these challenges, this study seeks to assess the 21st-century teaching skills of intermediate teachers in public elementary schools within the Calasiao I District. The aim is to provide a detailed understanding of the current competencies of these educators in integrating critical skills such as technology use, critical thinking, and problem-solving within their teaching practices. Based on the findings, the study intends to develop a capacity-building program tailored to enhance the 21st-century teaching skills of these teachers, thereby ensuring that they can meet both current educational standards and future demands.

## METHODOLOGY

### Research Design

This study will employ the quantitative-descriptive method of research. It will describe the teachers of public elementary schools in Malasiqui II District in terms of highest educational attainment, length of teaching experience, and the number of relevant trainings attended as well as will determine the extent of their knowledge on global citizenship education as perceived by themselves and their school heads. The study is also correlational for it will determine if there is a significant difference between the perceptions of the teachers and the school heads on the extent of knowledge on global citizenship education of the teachers as well as will determine if there is a significant relationship between the profile variables of the teachers and the extent of their knowledge on global citizenship education. Moreover, the developmental method of research will also be employed for the study will come up with a proposed enhancement training program to enhance the extent of knowledge on global citizenship education of the teachers of public elementary schools in Malasiqui II District.

### Sources of Data

**Research Setting.** This study was conducted in the different public elementary schools in Malasiqui II District during the School Year 2025-2026.



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**Sampling.** There will be two groups of respondents in this study, namely, the teachers and the school heads of the public elementary schools in Malasiqui II District. All the teachers and school heads of the public elementary schools in the district will be made as respondents. Accordingly, no sampling will be done.

**Research Participants.** As mentioned, all the teachers and school heads of public elementary schools in Malasiqui II District will be made as respondents of the study. The teachers will provide data relative to their highest educational attainment, length of teaching experience, number of relevant trainings they attended, and the extent of their knowledge on global citizenship education.

Meanwhile, the school heads will provide data on the extent of knowledge of the teachers on global citizenship education.

**Research Instrument**

**Instrumentation.** The data that will be utilized in this study will be gathered through two survey-questionnaires, one for the teachers and one for the school heads.

The survey-questionnaire for the teachers will have two parts. The first part will focus on the profile of the teachers of public elementary schools in Malasiqui II District in terms of the highest educational attainment, length of teaching experience, and the number of relevant trainings attended; and, the second part will focus on the extent of knowledge on global citizenship education of the teachers.

On the other hand, the survey-questionnaire for the school heads will simply focus on the extent of knowledge on global citizenship education of the teachers.

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**Trustworthiness.** The items in the first part of the survey-questionnaire which is about the profile of the teachers is common in researchers. Hence, no validation is required.

Meanwhile, the items in the second part of the survey-questionnaire which is about the extent of knowledge on global citizenship education will be based from the survey-questionnaire of Arenas (2022) in her study entitled "Knowledge and Integration of Global Citizenship Education in 'Edukasyon sa Pagpapakatao' by the Public Elementary School Teachers in Bugallon II District".

**Ethical Considerations.** So as not to violate the data privacy of the teachers and the school heads, permission to conduct the study will first be secured from the Schools Division Superintendent of Pangasinan I. Thereafter, informed consent will be taken from the teachers and the school heads.

Moreover, the researcher will treat the data that will be gathered with utmost confidentially and will be used only for the purpose of answering the research questions of the study in accordance with the Data Privacy Act of the Philippines. Likewise, authors of researches, articles, and other scholar works that will be used in this study will be cited, properly acknowledged, and documented.

**Data Management and Analysis**

To determine the profile of the teachers of the public elementary schools in Malasiqui II District, the data that will be gathered will be subjected to frequency count employing the formula:



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$$P = \frac{f}{N} \times 100$$

where:

P = the computed percentage
f = the observed frequency
N = total number of subject cases

To determine the extent of knowledge on global citizenship education of the of the teachers, the weighted mean will be used employing the formula:

$$WM = \frac{\sum wX}{\sum w}$$

where:

WM = weighted mean
$\sum$ = summation
W = weighing factor
X = frequency.

Moreover, the weighted means that will be computed will be interpreted using this scale of interpretation:

| | | |
|---|---|---|
| very limited extent | = | 1.00 – 1.49 |
| limited extent | = | 1.50 – 2.49 |
| moderate extent | = | 2.50 – 3.49 |
| great extent | = | 3.50 – 4.49 |
| very great extent | = | 4.50 – 5.00 |

To determine the difference between the perceptions of the teachers and the school heads on the extent of knowledge on global citizenship education of the teachers, the t-test will be utilized.

Lastly, to determine the relationship between the profile variables of the teachers and the extent of their knowledge on global citizenship education, the chi square test of independence will be used.

## RESULTS AND DISCUSSION

### The Profile of the Intermediate Teachers

This section presents the profile of the intermediate teachers of public elementary schools in Calasiao I District to answer the first problem of the study.

### On Gender

The intermediate teachers were asked to provide their gender. Table 1 presents the results.

**TABLE 1**
**Distribution of the Intermediate Teachers in terms of Gender**



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| Gender | Frequency | Percentage |
|---|---|---|
| Male | 29 | 25% |
| Female | 87 | 75% |
| Total | 116 | 100% |

As revealed in Table 1, 29 or 25% of the intermediate teachers are males and 87 or 75% are females. It can be noted that majority of the intermediate teachers of public elementary schools in Calasiao I District are females.

**On Civil Status**

As regards civil status, the intermediate teachers were provided three choices, namely, "single," "married," and "separated/widow/er." Table 2 presents the results.

**TABLE 2**
**Distribution of the Intermediate Teachers in terms of Civil Status**

| Civil Status | Frequency | Percentage |
|---|---|---|
| Single | 23 | 20% |
| Married | 88 | 76% |
| Separated/widow/er | 5 | 4% |
| Total | 116 | 100% |

As shown in Table 2, 23 or 20% of the intermediate teachers are single, 88 or 76% are married, and five or 4% are separated/widow/er. As can be noted, majority of the intermediate teachers of public elementary schools in Calasiao I District are married.

**On Highest Educational Attainment**

With respect to highest educational attainment, the intermediate teachers were provided with five choices, scilicet, "bachelor's degree holder," "finished academic requirements for the master's degree," "master's degree holders," "finished academic requirements for the doctoral degree," and "doctoral degree holder." Table 3 presents the results.

**TABLE 3**
**Distribution of the Intermediate Teachers in terms of Highest Educational Attainment**

| Educational Attainment | Frequency | Percentage |
|---|---|---|
| Bachelor's degree holder | 44 | 38% |
| Finished academic requirements for the master's degree | 39 | 34% |
| Master's degree holder | 19 | 16% |
| Finished academic requirements for the doctoral degree | 9 | 8% |
| Doctoral degree holder | 5 | 4% |



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| | | |
|---|---|---|
| Total | 116 | 100% |

As presented in Table 3, 44 or 38% of the intermediate teachers are bachelor's degree holders, 39 or 34% have finished the academic requirements for the master's degree, 19 or 16% are master's degree holders, nine or 8% have finished the academic requirements for the doctoral degree, and five or 4% are doctoral degree holders. Explicitly, majority of the intermediate teachers of public elementary schools in Calasiao I District have no post-graduate degrees.

**On Length of Teaching Experience**

With regard to length of teaching experience, the intermediate teachers were provided with four choices: "1 to 5 years," "6 to 10 years," "11 to 15 years," "more than 15 years." Table 4 manifests the results.

**TABLE 4**
**Distribution of the Intermediate Teachers in terms of Length of Teaching Experience**

| Length of Experience | Frequency | Percentage |
|---|---|---|
| 1 - 5 years | 15 | 13% |
| 6 - 10 years | 31 | 27% |
| 11 - 15 years | 53 | 46% |
| more than 15 years | 17 | 14% |
| Total | 116 | 100% |

As revealed in Table 4, 15 or 13% of the intermediate teachers have been teaching for one to five years, 31 or 27% have been teaching for six to 10 years, 53 or 46% have been teaching for 11 to 15 years, and 17 or 14% have been teaching for more than 15 years. It can be surmised that majority of the intermediate teachers have been teaching for more than 10 years**.**

**On Number of Trainings/Seminars Related with 21st Century Teaching Skills**

In relation to the number of trainings/seminars related with 21st century teaching skills attended for the past five years, the intermediate teachers were provided with three choices, to wit, "have not attended any trainings/seminars related with 21st century teaching skills for the past five years," "have attended not more than three trainings/seminars related with 21st century teaching skills for the past five years," and "have attended more than three trainings/seminars related with 21st century teaching skills for the past five years." Table 5 presents the results.

As gleaned in Table 5, 88 or 76% of the intermediate teachers have attended not more than three trainings/seminars related with 21st century teaching skills for the past five years and 23 or 24% have attended more than three trainings/seminars. As can be noted, majority of the intermediate teachers of public elementary schools in Calasiao I District have attended not more than three trainings/seminars related with 21st century teaching skills for the past five years.

**TABLE 5**
**Distribution of the Intermediate Teachers in terms of Number of Related Trainings Attended**

| Number of Trainings/Seminars Attended | Frequency | Percentage |
|---|---|---|
| Have not attended any training/seminar related with 21st | 0 | 0% |



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| | | |
|---|---|---|
| century teaching skills for the past five years | | |
| Have attended not more than three trainings/seminars related with 21st century teaching skills for the past five years | 88 | 76% |
| Have attended more than three trainings/seminars related with 21st century teaching skills for the past five years | 28 | 24% |
| Total | 116 | 100% |

**The Extent to which the Intermediate Teachers of Public Elementary Schools in Calasiao I District Master 21st Century Teaching Skills**

This section presents answers to the second sub-problem of the study which is about the extent to which the intermediate teachers of public elementary schools in Calasiao I District master 21st century teaching skills.

To provide answers to the sub-problem, the intermediate teachers were asked to rate the extent to which they master 21st century teaching skills. Likewise, the school heads were asked to rate the extent to which their intermediate teachers master 21`st century teaching skills.

**On Critical Thinking Skills**

The intermediate teachers and their school heads assessed the extent to which the intermediate teachers master 21st century teaching skills along critical thinking skills.

**Assessment of the Intermediate Teachers.** The assessment of the intermediate teachers on the extent to which they master 21st century teaching skills along critical thinking skills is presented in Table 6.

As shown in Table 6, when questioned as to the extent to which they ask their pupils to compare information from different sources before completing a task or assignment, 23 of the intermediate teachers claimed “moderate extent,” 79 claimed “great extent,” and 14 claimed “very great extent.” The weighted mean computed here is 3.92 which is pointing to “great extent” in the scale.

When asked as to the extent to which they ask their pupils to draw their own conclusions based on analysis of numbers, facts, or relevant information, 26 of the intermediate teachers replied “moderate extent,” 76 replied “great extent,” and 14 replied “very great extent.” The weighted mean computed in this item is 3.90 which is leading to “great extent” in the scale.

When inquired as to the extent to which they ask their pupils to summarize or create their own interpretation of what they have read or been taught, 19 of the intermediate teachers responded “moderate extent,” 83 responded “great extent,” and 14 responded “very great extent.” Here, the weighted mean computed is 3.96 which is indicative of “great extent” in the scale.

When queried as to the extent to which they ask their pupils to analyze competing arguments, perspectives or solutions to a problem, 23 of the intermediate teachers responded “moderate extent,” 78 responded “great extent,” and 15 responded “very great extent.” The weighted mean computed in this item is 3.93 which is pointing to “great extent” in the scale of interpretation.

When questioned as to the extent to which they ask their pupils to develop a persuasive argument based on supporting evidence or reasoning, 20 of the intermediate teachers checked



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"moderate extent," 82 checked "great extent," and 14 checked "very great extent." Here, the weighted mean computed is 3.95 which is "great extent" in the scale.

When asked as to the extent to which they ask their pupils to try to solve complex problems or answer questions that have no single correct solution or answer, 17 of the intermediate teachers mentioned "moderate extent," 86 mentioned "great extent," and 13 mentioned "very great extent." In this item, the weighted mean computed is 3.97 which is pointing to "great extent" in the scale.

When questioned as to the extent to which they have tried to develop pupils' critical thinking skills, 23 of the intermediate teachers claimed "moderate extent," 77 claimed "great extent," and 16 claimed "very great extent." The weighted mean computed here is 3.94 which is pointing to "great extent" in the scale.

When asked as to the extent to which most of their pupils have learned critical thinking skills while in their class, 20 of the intermediate teachers replied "moderate extent," 82 replied "great extent," and 14 replied "very great extent." The weighted mean computed in this item is 3.95 which is leading to "great extent" in the scale.

**TABLE 6**
**The Assessment of the Intermediate Teachers on the Extent to which They Master 21st Century Teaching Skills along Critical Thinking Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| A. Critical Thinking Skills | VL | LE | ME | GE | VG | | |
| 1. I ask my pupils to compare information from different sources before completing a task or assignment. | 0 | 0 | 23 | 79 | 14 | 3.92 | GE |
| 2. I ask my pupils to draw their own conclusions based on analysis of numbers, facts, or relevant information. | 0 | 0 | 26 | 76 | 14 | 3.90 | GE |
| 3. I ask my pupils to summarize or create their own interpretation of what they have read or been taught. | 0 | 0 | 19 | 83 | 14 | 3.96 | GE |
| 4. I ask my pupils to analyze competing arguments, perspectives or solutions to a problem. | 0 | 0 | 23 | 78 | 15 | 3.93 | GE |
| 5. I ask my pupils to develop a persuasive argument based on supporting evidence or reasoning. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 6. I ask my pupils to try to solve complex problems or answer questions that have no single correct solution or answer. | 0 | 0 | 17 | 86 | 13 | 3.97 | GE |
| 7. I have tried to develop pupils' critical thinking skills. | 0 | 0 | 23 | 77 | 16 | 3.94 | GE |
| 8. Most pupils have learned critical thinking skills while in my class. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 9. I have been able to effectively assess pupils' critical thinking skills. | 0 | 0 | 19 | 81 | 16 | 3.97 | GE |
| | | | | | AWM | 3.94 | GE |

Legend:
WM = weighted mean
DE = descriptive equivalent



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AWM = area weighted mean

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

Lastly, when inquired as to the extent to which they have been able to effectively assess pupils' critical thinking skills, 19 of the intermediate teachers responded "moderate extent," 81 replied "great extent," and 16 replied "very great extent." Here, the weighted mean computed is 3.97 which is indicative of "great extent" in the scale.

Meanwhile, the computed area weighted mean is 3.94. This implies that the intermediate teachers perceived that they master 21st century teaching skills along critical thinking skills to a great extent.

**Assessment of the School Heads.** The assessment of the school heads on the extent to which the intermediate teachers master 21st century skills along critical thinking skills is presented in Table 7.

As shown in Table 7, when questioned as to the extent to which the intermediate teachers ask their pupils to compare information from different sources before completing a task or assignment, two of the school heads claimed "limited extent," 10 claimed "moderate extent," and one claimed "great extent." The weighted mean computed here is 2.92 which is pointing to "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers ask their pupils to draw their own conclusions based on analysis of numbers, facts, or relevant information, three of the school heads replied "limited extent" and 10 replied "moderate extent." The weighted mean computed in this item is 2.77 which is leading to "moderate extent" in the scale.

**TABLE 7**
**The Assessment of the School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills along Critical Thinking Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| A. Critical Thinking Skills: My intermediate teachers/Teachers'… | VL | LE | ME | GE | VG | | |
| 1. Ask their pupils to compare information from different sources before completing a task or assignment. | 0 | 2 | 10 | 1 | 0 | 2.92 | ME |
| 2. Ask their pupils to draw their own conclusions based on analysis of numbers, facts, or relevant information. | 0 | 3 | 10 | 0 | 0 | 2.77 | ME |
| 3. Ask their pupils to summarize or create their own interpretation of what they have read or been taught. | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4. Ask their pupils to analyze competing arguments, perspectives or solutions to a problem. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 5. Ask their pupils to develop a persuasive argument based on supporting evidence or reasoning. | 0 | 4 | 8 | 1 | 0 | 2.77 | ME |
| 6. Ask their pupils to try to solve complex problems or answer questions that have no single correct solution or answer. | 0 | 1 | 10 | 2 | 0 | 3.08 | ME |
| 7. Have tried to develop pupils' critical thinking skills. | 0 | 2 | 8 | 3 | 0 | 3.08 | ME |
| 8. Pupils have learned critical thinking skills while in their class. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 9. Have been able to effectively assess pupils' critical thinking skills. | 0 | 1 | 10 | 2 | 0 | 3.08 | ME |
| | | | | | AWM | 2.95 | ME |

Legend:

WM = weighted mean
DE = descriptive equivalent
AWM = area weighted mean

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

When inquired as to the extent to which the intermediate teachers ask their pupils to summarize or create their own interpretation of what they have read or been taught, three of the school heads responded "limited extent," nine responded "moderate extent," and one responded "great extent." Here, the weighted mean computed is 2.85 which is indicative of "moderate extent" in the scale.

When queried as to the extent to which the intermediate teachers ask their pupils to analyze competing arguments, perspectives or solutions to a problem, two of the school heads responded "limited extent," nine responded "moderate extent," and two responded "great extent." The weighted mean computed in this item is 3.00 which is pointing to "moderate extent" in the scale of interpretation.

When questioned as to the extent to which the intermediate teachers ask their pupils to develop a persuasive argument based on supporting evidence or reasoning, four of the school heads checked "limited extent," eight checked "moderate extent," and one checked "great extent." Here, the weighted mean computed is 3.77 which is "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers ask their pupils to try to solve complex problems or answer questions that have no single correct solution or answer, one of the school heads mentioned "limited extent," 10 mentioned "moderate extent," and two mentioned "great extent." In this item, the weighted mean computed is 3.08 which is pointing to "moderate extent" in the scale.



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When questioned as to the extent to which the intermediate teachers have tried to develop pupils' critical thinking skills, two of the school heads claimed "limited extent," eight claimed "moderate extent," and three claimed "great extent." The weighted mean computed here is 3.08 which is pointing to "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers' pupils have learned critical thinking skills while in their class, two of the school heads replied "limited extent," nine replied "moderate extent," and two replied "great extent." The weighted mean computed in this item is 3.00 which is leading to "moderate extent" in the scale.

Lastly, when inquired as to the extent to which the intermediate teachers have been able to effectively assess pupils' critical thinking skills, one of the school heads responded "limited extent," 10 responded "moderate extent," and two replied "great extent." Here, the weighted mean computed is 3.08 which is indicative of "moderate extent" in the scale.

Meanwhile, the computed area weighted mean is 3.08. This implies that the school heads perceived that the intermediate teachers master 21st century teaching skills along critical thinking skills to a moderate extent only.

**On Collaboration Skills**

The intermediate teachers and their school heads assessed the extent to which the intermediate teachers master 21st century teaching skills along collaboration skills.

**Assessment of the Intermediate Teachers.** The assessment of the intermediate teachers on the extent to which they master 21st century teaching skills along collaboration skills is presented in Table 8.

As shown in Table 8, when questioned as to the extent to which they ask their pupils to work in pairs or small groups to complete a task together, 23 of the intermediate teachers claimed "moderate extent," 76 claimed "great extent," and 17 claimed "very great extent." The weighted mean computed here is 3.95 which is pointing to "great extent" in the scale.

When asked as to the extent to which they ask their pupils to work with other students to set goals and create a plan for their team, 23 of the intermediate teachers replied "moderate extent," 76 replied "great extent," and 17 replied "very great extent." The weighted mean computed in this item is 3.95 which is leading to "great extent" in the scale.

When inquired as to the extent to which they ask their pupils to create joint products using contributions from each pupil, 20 of the intermediate teachers responded "moderate extent," 82 responded "great extent," and 14 responded "very great extent." Here, the weighted mean computed is 3.95 which is indicative of "great extent" in the scale.

When queried as to the extent to which they ask their pupils to present their group work to the class, teacher or others, 20 of the intermediate teachers responded "moderate extent," 82 responded "great extent," and 14 responded"very great extent." The weighted mean computed in this item is 3.95 which is pointing to "great extent" in the scale of interpretation.

When questioned as to the extent to which they ask their pupils to work as a team to incorporate feedback on group tasks or products, 25 of the intermediate teachers checked



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"moderate extent," 75 checked "great extent," and 16 checked "very great extent." Here, the weighted mean computed is 3.92 which is "great extent" in the scale.

When asked as to the extent to which they ask their pupils to give feedback to peers or assess another pupils' work, 22 of the intermediate teachers mentioned "moderate extent," 76 mentioned "great extent," and 18 mentioned "very great extent." In this item, the weighted mean computed is 3.97 which is pointing to "great extent" in the scale.

When questioned as to the extent to which they have tried to develop pupils' collaboration skills, 17 of the intermediate teachers claimed "moderate extent," 86 claimed "great extent," and 13 claimed "very great extent." The weighted mean computed here is 3.97 which is pointing to "great extent" in the scale.

When asked as to the extent to which most of their pupils have learned collaboration skills while in their class, 22 of the intermediate teachers replied "moderate extent," 75 replied "great extent," and 19 replied "very great extent." The weighted mean computed in this item is 3.97 which is leading to "great extent" in the scale.

And, when inquired as to the extent to which they have been able to effectively assess pupils' collaboration skills, 26 of the intermediate teachers responded "moderate extent," 76 replied "great extent," and 14 replied "very great extent." Here, the weighted mean computed is 3.90 which is indicative of "great extent" in the scale.

Meanwhile, the computed area weighted mean is 3.95. This implies that the intermediate teachers perceived that they master 21st century teaching skills along collaboration skills to a great extent.

**TABLE 8**
**The Assessment of the Intermediate Teachers on the Extent to which They Master 21st Century Teaching Skills along Collaboration Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| B. Collaboration Skills | VL | LE | ME | GE | VG | | |
| 1. I ask my pupils to work in pairs or small groups to complete a task together. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 2. I ask my pupils to work with other students to set goals and create a plan for their team. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 3. I ask my pupils to create joint products using contributions from each pupil. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 4. I ask my pupils to present their group work to the class, teacher or others. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 5. I ask my pupils to work as a team to incorporate feedback on group tasks or products. | 0 | 0 | 25 | 75 | 16 | 3.92 | GE |
| 6. I ask my pupils to give feedback to peers or assess another pupils' work. | 0 | 0 | 22 | 76 | 18 | 3.97 | GE |
| 7. I have tried to develop pupils' collaboration skills. | 0 | 0 | 17 | 86 | 13 | 3.97 | GE |
| 8. Most pupils have learned collaboration skills | 0 | 0 | 22 | 75 | 19 | 3.97 | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| while in my class. | | | | | | | GE |
| 9. I have been able to effectively assess pupils' collaboration skills | 0 | 0 | 26 | 76 | 14 | 3.90 | GE |
| | | | | | AWM | 3.95 | GE |

**Assessment of the School Heads.** The assessment of the school heads on the extent to which the intermediate teachers master 21st century skills along collaboration skills is presented in Table 9.

As shown in Table 9, when questioned as to the extent to which the intermediate teachers ask their pupils to work in pairs or small groups to complete a task together, three of the school heads claimed "limited extent," nine claimed "moderate extent," and one claimed "great extent." The weighted mean computed here is 2.85 which is pointing to "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers ask their pupils to work with other students to set goals and create a plan for their team, three of the school heads replied "limited extent," eight replied "moderate extent," and two replied "great extent." The weighted mean computed in this item is 2.92 which is leading to "moderate extent" in the scale.

**TABLE 9**
**The Assessment of the School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills along Collaboration Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| B. Collaboration Skills: My intermediate teachers/teachers'… | VL | LE | ME | GE | VG | | |
| 1. Ask their pupils to work in pairs or small groups to complete a task together. | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| 2. Ask their pupils to work with other students to set goals and create a plan for their team. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 3. Ask their pupils to create joint products using contributions from each pupil. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 4. Ask their pupils to present their group work to the class, teacher or others. | 0 | 2 | 10 | 1 | 0 | 2.92 | ME |
| 5. Ask their pupils to work as a team to incorporate feedback on group tasks or products. | 0 | 1 | 10 | 2 | 0 | 3.08 | ME |
| 6. Ask their pupils to give feedback to peers or assess another pupils' work. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 7. Have tried to develop pupils' collaboration skills. | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| 8. Pupils have learned collaboration skills while in their class. | 0 | 2 | 8 | 3 | 0 | 3.08 | ME |
| 9. Have been able to effectively assess pupils' collaboration skills. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| | | | | | AWM | 2.95 | ME |

**Legend:**



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| | | | | |
|---|---|---|---|---|
| WM | = | weighted mean | | |
| DE | = | descriptive equivalent | | |
| AWM | = | area weighted mean | | |

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

When inquired as to the extent to which the intermediate teachers ask their pupils to create joint products using contributions from each pupil, two of the school heads responded “limited extent,” nine responded “moderate extent,” and two responded “great extent.” Here, the weighted mean computed is 3.00 which is indicative of “moderate extent” in the scale.

When queried as to the extent to which the intermediate teachers ask their pupils to present their group work to the class, teacher or others, two of the school heads responded “limited extent,” 10 responded “moderate extent,” and one responded “great extent.” The weighted mean computed in this item is 2.92 which is pointing to “moderate extent” in the scale of interpretation.

When questioned as to the extent to which the intermediate teachers ask their pupils to work as a team to incorporate feedback on group tasks or products, one of the school heads checked “limited extent,” 10 checked “moderate extent,” and two checked “great extent.” Here, the weighted mean computed is 3.08 which is “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers ask their pupils to give feedback to peers or assess another pupils’ work, three of the school heads mentioned “limited extent,” eight mentioned “moderate extent,” and two mentioned “great extent.” In this item, the weighted mean computed is 2.92 which is pointing to “moderate extent” in the scale.

When questioned as to the extent to which the intermediate teachers have tried to develop pupils’ collaboration skills, three of the school heads claimed “limited extent,” nine claimed “moderate extent,” and one claimed “great extent.” The weighted mean computed here is 2.85 which is pointing to “moderate extent” in the scale.

When asked as to the extent to which most of the pupils of the intermediate teachers have learned collaboration skills while in their class, two of the school heads replied “limited extent,” eight replied “moderate extent,” and three replied “great extent.” The weighted mean computed in this item is 3.08 which is leading to “moderate extent” in the scale.

And, when inquired as to the extent to which the intermediate teachers have been able to effectively assess pupils’ collaboration skills, three of the school heads replied “limited extent,” eight responded “moderate extent,” and two replied “great extent.” Here, the weighted mean computed is 2.92 which is indicative of “moderate extent” in the scale.



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Meanwhile, the computed area weighted mean is 2.95. This implies that the school heads perceived that the intermediate teachers master 21st century teaching skills along collaboration skills to a moderate extent.

**On Communication Skills**

The intermediate teachers and their school heads assessed the extent to which the intermediate teachers master 21st century teaching skills along communication skills.

**Assessment of the Intermediate Teachers.** The assessment of the intermediate teachers on the extent to which they master 21st century teaching skills along communication skills is presented in Table 10.

As shown in Table 10, when questioned as to the extent to which they make their pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs), 23 of the intermediate teachers claimed "moderate extent," 76 claimed "great extent," and 17 claimed "very great extent." The weighted mean computed here is 3.95 which is pointing to "great extent" in the scale.

When asked as to the extent to which they make their pupils convey their ideas using media other than a written paper (e.g., posters, video, blogs, etc.), 26 of the intermediate teachers replied "moderate extent," 76 replied "great extent," and 14 replied "very great extent." The weighted mean computed in this item is 3.90 which is leading to "great extent" in the scale.

When inquired as to the extent to which they make their pupils prepare and deliver an oral presentation to the teacher or others, 19 of the intermediate teachers responded "moderate extent," 83 responded "great extent," and 14 responded "very great extent." Here, the weighted mean computed is 3.96 which is indicative of "great extent" in the scale.

When queried as to the extent to which they make their pupils answer questions in front of an audience, 23 of the intermediate teachers responded "moderate extent," 76 responded "great extent," and 17 responded "very great extent." The weighted mean computed in this item is 3.95 which is pointing to "great extent" in the scale of interpretation.

When questioned as to the extent to which they make their pupils decide how they will present their work or demonstrate their learning, 23 of the intermediate teachers checked "moderate extent," 76 checked "great extent," and 17 checked "very great extent." Here, the weighted mean computed is 3.95 which is "great extent" in the scale.

When asked as to the extent to which they make their pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs), 17 of the intermediate teachers mentioned "moderate extent," 86 mentioned "great extent," and 13 mentioned "very great extent." In this item, the weighted mean computed is 3.97 which is pointing to "great extent" in the scale.

When questioned as to the extent to which they have tried to develop pupils' communication skills, 22 of the intermediate teachers claimed "moderate extent," 75 claimed



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"great extent," and 19 claimed "very great extent." The weighted mean computed here is 3.97 which is pointing to "great extent" in the scale.

When asked as to the extent to which most of their pupils have learned communication skills while in their class, 23 of the intermediate teachers replied "moderate extent," 77 replied "great extent," and 16 replied "very great extent." The weighted mean computed in this item is 3.94 which is leading to "great extent" in the scale.

Finally, when inquired as to the extent to which they have been able to effectively assess pupils' communication skills, 20 of the intermediate teachers responded "moderate extent," 82 replied "great extent," and 14 replied "very great extent." Here, the weighted mean computed is 3.95 which is indicative of "great extent" in the scale.

Moreover, the computed area weighted mean is 3.95. This implies that the intermediate teachers perceived that they master 21st century teaching skills along communication skills to a great extent.

**TABLE 10**
**The Assessment of the Intermediate Teachers on the Extent to which They Master 21st Century Teaching Skills along Communication Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| C. Communication Skills | VL | LE | ME | GE | VG | | |
| 1. I make my pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs). | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 2. I make my pupils convey their ideas using media other than a written paper (e.g., posters, video, blogs, etc.). | 0 | 0 | 26 | 76 | 14 | 3.90 | GE |
| 3. I make my pupils prepare and deliver an oral presentation to the teacher or others. | 0 | 0 | 19 | 83 | 14 | 3.96 | GE |
| 4. I make my pupils answer questions in front of an audience. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 5. I make my pupils decide how they will present their work or demonstrate their learning. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 6. I make my pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs). | 0 | 0 | 17 | 86 | 13 | 3.97 | GE |
| 7. I have tried to develop pupils' communication skills. | 0 | 0 | 22 | 75 | 19 | 3.97 | GE |
| 8. Most pupils have learned communication skills while in my class. | 0 | 0 | 23 | 77 | 16 | 3.94 | GE |
| 9. I have been able to effectively assess pupils' communication skills. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| | | | | | AWM | 3.95 | GE |

Legend:
WM = weighted mean
DE = descriptive equivalent



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AWM = area weighted mean

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

**Assessment of the School Heads.** The assessment of the school heads on the extent to which the intermediate teachers master 21st century skills along communication skills is presented in Table 11.

As revealed in Table 11, when questioned as to the extent to which the intermediate teachers make their pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs), two of the school heads claimed "limited extent," nine claimed "moderate extent," two claimed "great extent." The weighted mean computed here is 3.00 which is pointing to "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers make their pupils convey their ideas using media other than a written paper (e.g., posters, video, blogs, etc.), three of the school heads replied "limited extent," eight replied "moderate extent," and two replied "great extent." The weighted mean computed in this item is 2.92 which is leading to "moderate extent" in the scale.

**TABLE 11**
**The Assessment of the School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills along Communication Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| C. Communication Skills: My intermediate teachers/teachers'… | VL | LE | ME | GE | VG | | |
| 1. Make their pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs). | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 2. Make their pupils convey their ideas using media other than a written paper (e.g., posters, video, blogs, etc.). | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 3. Make their pupils prepare and deliver an oral presentation to the teacher or others. | 0 | 2 | 10 | 1 | 0 | 2.92 | ME |
| 4. Make their pupils answer questions in front of an audience. | 0 | 1 | 9 | 3 | 0 | 3.15 | ME |
| 5. Make their pupils decide how they will present their work or demonstrate their learning. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 6. Make their pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs). | 0 | 2 | 8 | 3 | 0 | 3.08 | ME |
| 7. Have tried to develop pupils' communication skills. | 0 | 1 | 9 | 3 | 0 | 3.15 | ME |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8. Pupils have learned communication skills while in their class. | 0 | 1 | 10 | 2 | 0 | 3.08 | ME |
| 9. Have been able to effectively assess pupils' communication skills. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| | | | | | AWM | 3.03 | ME |

Legend:

| | | |
|---|---|---|
| WM | = | weighted mean |
| DE | = | descriptive equivalent |
| AWM | = | area weighted mean |

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

When inquired as to the extent to which the intermediate teachers make their pupils prepare and deliver an oral presentation to the teacher or others, two of the school heads responded "limited extent," 10 responded "moderate extent," and one responded "great extent." Here, the weighted mean computed is 2.92 which is indicative of "moderate extent" in the scale.

When queried as to the extent to which the intermediate teachers make their pupils answer questions in front of an audience, one of the school heads responded "limited extent," nine responded "moderate extent," and three responded "great extent." The weighted mean computed in this item is 3.95 which is pointing to "moderate extent" in the scale of interpretation.

When questioned as to the extent to which the intermediate teachers make their pupils decide how they will present their work or demonstrate their learning, two of the school heads checked "limited extent," nine checked "moderate extent," and two checked "great extent." Here, the weighted mean computed is 3.00 which is "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers make their pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs), two of the school heads mentioned "limited extent," eight mentioned "moderate extent," and three mentioned "great extent." In this item, the weighted mean computed is 3.08 which is pointing to "moderate extent" in the scale.

When questioned as to the extent to which the intermediate teachers have tried to develop pupils' communication skills, one of the school heads claimed "limited extent," nine claimed "moderate extent," and three claimed "great extent." The weighted mean computed here is 3.15 which is pointing to "moderate extent" in the scale.

When asked as to the extent to which most of the pupils of the intermediate teachers have learned communication skills while in their class, one of the school heads relied "limited extent," 10 replied "moderate extent," and two replied "great extent." The weighted mean computed in this item is 3.08 which is leading to "moderate extent" in the scale.



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And, when inquired as to the extent to which the intermediate teachers have been able to effectively assess pupils' communication skills, two of the school heads replied "limited extent," nine responded "moderate extent," and two replied "great extent." Here, the weighted mean computed is 3.00 which is indicative of "moderate extent" in the scale.

Moreover, the computed area weighted mean is 3.03. This implies that the school heads perceived that the intermediate teachers master 21st century teaching skills along communication skills to a moderate extent.

**On Creativity and Innovation Skills**

The intermediate teachers and their school heads assessed the extent to which the intermediate teachers master 21st century teaching skills along creativity and innovation skills.

**Assessment of the Intermediate Teachers.** The assessment of the intermediate teachers on the extent to which they master 21st century teaching skills along creativity and innovation skills is presented in Table 12.

As shown in Table 12, when questioned as to the extent to which they make their pupils use idea creation techniques such as brainstorming or concept mapping, 23 of the intermediate teachers claimed "moderate extent," 78 claimed "great extent," and 15 claimed "very great extent." The weighted mean computed here is 3.93 which is pointing to "great extent" in the scale.

When asked as to the extent to which they make their pupils generate their own ideas about how to confront a problem or question, 20 of the intermediate teachers replied "moderate extent," 82 replied "great extent," and 14 replied "very great extent." The weighted mean computed in this item is 3.95 which is leading to "great extent" in the scale.

When inquired as to the extent to which they make their pupils test out different ideas and work to improve them, 20 of the intermediate teachers responded "moderate extent," 82 responded "great extent," and 14 responded "very great extent." Here, the weighted mean computed is 3.95 which is indicative of "great extent" in the scale.

When queried as to the extent to which they make their pupils invent a solution to a complex, open-ended question or problem, 25 of the intermediate teachers responded "moderate extent," 75 responded "great extent," and 16 responded "very great extent." The weighted mean computed in this item is 3.92 which is pointing to "great extent" in the scale of interpretation.

When questioned as to the extent to which they make their pupils create an original product or performance to express their ideas, 22 of the intermediate teachers checked "moderate extent," 75 checked "great extent," and 19 checked "very great extent." Here, the weighted mean computed is 3.97 which is "great extent" in the scale.

When asked as to the extent to which they have tried to develop pupils' creativity and innovation skills, 26 of the intermediate teachers mentioned "moderate extent," 76 mentioned



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"great extent," and 14 mentioned "very great extent." In this item, the weighted mean computed is 3.90 which is pointing to "great extent" in the scale.

When questioned as to the extent to which most of their pupils have learned creativity and innovation skills while in their class, 23 of the intermediate teachers claimed "moderate extent," 77 claimed "great extent," and 16 claimed "very great extent." The weighted mean computed here is 3.94 which is pointing to "great extent" in the scale.

And, when asked as to the extent to which they have been able to effectively assess pupils' creativity and innovation skills, 20 of the intermediate teachers replied "moderate extent," 82 replied "great extent," and 14 replied "very great extent." The weighted mean computed in this item is 3.95 which is leading to "great extent" in the scale.

Moreover, the computed area weighted mean is 3.94. This implies that the intermediate teachers perceived that they master 21st century teaching skills along creativity and innovation skills to a great extent.

**TABLE 12**
**The Assessment of the Intermediate Teachers on the Extent to which They Master 21st Century Teaching Skills along Creativity and Innovation Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| D. Creativity and Innovation Skills | VL | LE | ME | GE | VG | | |
| 1. I make my pupils use idea creation techniques such as brainstorming or concept mapping. | 0 | 0 | 23 | 78 | 15 | 3.93 | GE |
| 2. I make my pupils generate their own ideas about how to confront a problem or question. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 3. I make my pupils test out different ideas and work to improve them. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 4. I make my pupils invent a solution to a complex, open-ended question or problem. | 0 | 0 | 25 | 75 | 16 | 3.92 | GE |
| 5. I make my pupils create an original product or performance to express their ideas. | 0 | 0 | 22 | 75 | 19 | 3.97 | GE |
| 6. I have tried to develop pupils' creativity and innovation skills. | 0 | 0 | 26 | 76 | 14 | 3.90 | GE |
| 7. Most pupils have learned creativity and innovation skills while in my class. | 0 | 0 | 23 | 77 | 16 | 3.94 | GE |
| 8. I have been able to effectively assess pupils' creativity and innovation skills. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| | | | | | AWM | 3.94 | GE |

**Assessment of the School Heads.** The assessment of the school heads on the extent to which the intermediate teachers master 21st century skills along creativity and innovation skills is presented in Table 13.



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As shown in Table 13, when questioned as to the extent to which the intermediate teachers make their pupils use idea creation techniques such as brainstorming or concept mapping, three of the school heads claimed "limited extent," eight claimed "moderate extent," and two claimed "great extent." The weighted mean computed here is 2.92 which is pointing to "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers make their pupils generate their own ideas about how to confront a problem or question, two of the school heads replied "limited extent," eight replied "moderate extent," and three replied "great extent." The weighted mean computed in this item is 3.08 which is leading to "moderate extent" in the scale.

**TABLE 13**
**The Assessment of the School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills along Creativity and Innovation Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| D. Creativity and Innovation Skills: My intermediate teachers/teachers'… | VL | LE | ME | GE | VG | | |
| 1. Make their pupils use idea creation techniques such as brainstorming or concept mapping. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 2. Make their pupils generate their own ideas about how to confront a problem or question. | 0 | 2 | 8 | 3 | 0 | 3.08 | ME |
| 3. Make their pupils test out different ideas and work to improve them. | 0 | 2 | 10 | 1 | 0 | 2.92 | ME |
| 4. Make their pupils invent a solution to a complex, open-ended question or problem. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 5. Make their pupils create an original product or performance to express their ideas. | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| 6. Have tried to develop pupils' creativity and innovation skills. | 0 | 3 | 10 | 0 | 0 | 2.77 | ME |
| 7. Pupils have learned creativity and innovation skills while in their class. | 0 | 1 | 10 | 2 | 0 | 3.08 | ME |
| 8. Have been able to effectively assess pupils' creativity and innovation skills. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| | | | | | AWM | 2.95 | ME |

Legend:

WM = weighted mean
DE = descriptive equivalent
AWM = area weighted mean

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |



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When inquired as to the extent to which the intermediate teachers make their pupils test out different ideas and work to improve them, two of the school heads responded "limited extent," 10 responded "moderate extent," and one responded "great extent." Here, the weighted mean computed is 2.92 which is indicative of "moderate extent" in the scale.

When queried as to the extent to which the intermediate teachers make their pupils invent a solution to a complex, open-ended question or problem, two of the school heads responded "limited extent," nine responded "moderate extent," and two responded "great extent." The weighted mean computed in this item is 3.00 which is pointing to "moderate extent" in the scale of interpretation.

When questioned as to the extent to which the intermediate teachers make their pupils create an original product or performance to express their ideas, three of the school heads checked "limited extent," nine checked "moderate extent," and one checked "great extent." Here, the weighted mean computed is 2.85 which is "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers have tried to develop pupils' creativity and innovation skills, three of the school heads mentioned "limited extent," and 10 mentioned "moderate extent." In this item, the weighted mean computed is 2.77 which is pointing to "moderate extent" in the scale.

When questioned as to the extent to which most of the pupils of the intermediate teachers have learned creativity and innovation skills while in their class, one of the school heads claimed "limited extent," 10 claimed "moderate extent," and two claimed "great extent." The weighted mean computed here is 3.08 which is pointing to "moderate extent" in the scale.

And, when asked as to the extent to which the intermediate teachers have been able to effectively assess pupils' creativity and innovation skills, two of the school heads replied "limited extent," nine replied "moderate extent," and two replied "great extent." The weighted mean computed in this item is 3.00 which is leading to "moderate extent" in the scale.

Moreover, the computed area weighted mean is 3.00. This implies that the school heads perceived that the intermediate teachers master 21st century teaching skills along creativity and innovation skills to a moderate extent.

**On Self-Direction Skills**

The intermediate teachers and their school heads assessed the extent to which the intermediate teachers master 21st century teaching skills along self-direction skills.

**Assessment of the Intermediate Teachers.** The assessment of the intermediate teachers on the extent to which they master 21st century teaching skills along self-direction skills is presented in Table 14.

As shown in Table 14, when questioned as to the extent to which they make their pupils take initiative when confronted with a difficult problem or question, 26 of the intermediate teachers claimed "moderate extent," 76 claimed "great extent," and 14 claimed "very great extent." The weighted mean computed here is 3.90 which is pointing to "great extent" in the scale.



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**TABLE 14**
**The Assessment of the Intermediate Teachers on the Extent to which They Master 21st Century Teaching Skills along Self-Direction Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| E. Self-Direction Skills | VL | LE | ME | GE | VG | | |
| 1. I make my pupils take initiative when confronted with a difficult problem or question. | 0 | 0 | 26 | 76 | 14 | 3.90 | GE |
| 2. I make my pupils choose their own topics of learning or questions to pursue. | 0 | 0 | 19 | 83 | 14 | 3.96 | GE |
| 3. I make my pupils plan the steps they will take to accomplish a complex task. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 4. I make my pupils choose for themselves what examples to study or resources to use. | 0 | 0 | 17 | 86 | 13 | 3.97 | GE |
| 5. I make my pupils monitor their own progress towards completion of a complex task and modify their work accordingly. | 0 | 0 | 17 | 86 | 13 | 3.97 | GE |
| 6. I make my pupils use specific criteria to assess the quality of their work before it is completed. | 0 | 0 | 23 | 77 | 16 | 3.94 | GE |
| 7. I make my pupils use peer, teacher or expert feedback to revise their work. | 0 | 0 | 17 | 86 | 13 | 3.97 | GE |
| 8. I have tried to develop pupils' self-direction skills. | 0 | 0 | 22 | 75 | 19 | 3.97 | GE |
| 9. Most pupils have learned self-direction skills while in my class. | 0 | 0 | 23 | 78 | 15 | 3.93 | GE |
| 10. I have been able to effectively assess pupils' self-direction skills. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| | | | | | AWM | 3.95 | GE |

Legend:

| | | |
|---|---|---|
| WM | = | weighted mean |
| DE | = | descriptive equivalent |
| AWM | = | area weighted mean |

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

When asked as to the extent to which they make their pupils choose their own topics of learning or questions to pursue, 19 of the intermediate teachers replied "moderate extent," 83 replied "great extent," and 14 replied "very great extent." The weighted mean computed in this item is 3.96 which is leading to "great extent" in the scale.



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When inquired as to the extent to which they make their pupils plan the steps they will take to accomplish a complex task, 23 of the intermediate teachers responded “moderate extent,” 76 responded “great extent,” and 17 responded “very great extent.” Here, the weighted mean computed is 3.95 which is indicative of “great extent” in the scale.

When questioned as to the extent to which they make their pupils choose for themselves what examples to study or resources to use, 17 of the intermediate teachers checked “moderate extent,” 86 checked “great extent,” and 13 checked “very great extent.” Here, the weighted mean computed is 3.97 which is “great extent” in the scale.

When asked as to the extent to which they make their pupils monitor their own progress towards completion of a complex task and modify their work accordingly, 17 of the intermediate teachers mentioned “moderate extent,” 86 mentioned “great extent,” and 13 mentioned “very great extent.” In this item, the weighted mean computed is 3.97 which is pointing to “great extent” in the scale.

When questioned as to the extent to which they make their pupils use specific criteria to assess the quality of their work before it is completed, 23 of the intermediate teachers claimed “moderate extent,” 77 claimed “great extent,” and 16 claimed “very great extent.” The weighted mean computed here is 3.94 which is pointing to “great extent” in the scale.

When asked as to the extent to which they make their pupils use peer, teacher or expert feedback to revise their work, 17 of the intermediate teachers mentioned “moderate extent,” 86 mentioned “great extent,” and 13 mentioned “very great extent.” In this item, the weighted mean computed is 3.97 which is pointing to “great extent” in the scale.

When questioned as to the extent to which they have tried to develop pupils’ self-direction skills, 22 of the intermediate teachers claimed “moderate extent,” 75 claimed “great extent,” and 19 claimed “very great extent.” The weighted mean computed here is 3.97 which is pointing to “great extent” in the scale.

When queried as to the extent to which most of their pupils have learned self-direction skills while in their class, 23 of the intermediate teachers responded “moderate extent,” 78 responded “great extent,” and 15 responded “very great extent.” The weighted mean computed in this item is 3.93 which is pointing to “great extent” in the scale of interpretation.

And, when asked as to the extent to which they have been able to effectively assess pupils’ self-direction skills, 20 of the intermediate teachers replied “moderate extent,” 82 replied “great extent,” and 14 replied “very great extent.” The weighted mean computed in this item is 3.95 which is leading to “great extent” in the scale.

Moreover, the computed area weighted mean is 3.95. This implies that the intermediate teachers perceived that they master 21$^{st}$ century teaching skills along self-direction skills to a great extent.

**Assessment of the School Heads.** The assessment of the school heads on the extent to which the intermediate teachers master 21$^{st}$ century skills along self-direction skills is presented in Table 15.



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As shown in Table 15, when questioned as to the extent to which the intermediate teachers make their pupils take initiative when confronted with a difficult problem or question, one of the school heads claimed "limited extent," 10 claimed "moderate extent," and two claimed "great extent." The weighted mean computed here is 3.08 which is pointing to "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers make their pupils choose their own topics of learning or questions to pursue, three of the school heads replied "limited extent," eight replied "moderate extent," and two replied "great extent." The weighted mean computed in this item is 2.92 which is leading to "moderate extent" in the scale.

When inquired as to the extent to which the intermediate teachers make their pupils plan the steps they will take to accomplish a complex task, three of the school heads responded "limited extent," eight responded "moderate extent," and two responded "great extent." Here, the weighted mean computed is 2.92 which is indicative of "moderate extent" in the scale.

**TABLE 15**
**The Assessment of the School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills along Self-Direction Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| E. Self-Direction Skills: My intermediate teachers/teachers'… | VL | LE | ME | GE | VG | | |
| 1. Make their pupils take initiative when confronted with a difficult problem or question. | 0 | 1 | 10 | 2 | 0 | 3.08 | ME |
| 2. Make their pupils choose their own topics of learning or questions to pursue. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 3. Make their pupils plan the steps they will take to accomplish a complex task. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 4. Make their pupils choose for themselves what examples to study or resources to use. | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| 5. Make their pupils monitor their own progress towards completion of a complex task and modify their work accordingly. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 6. Make their pupils use specific criteria to assess the quality of their work before it is completed. | 0 | 1 | 9 | 3 | 0 | 3.15 | ME |
| 7. Make their pupils use peer, teacher or expert feedback to revise their work. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 8. Have tried to develop pupils' self-direction skills. | 0 | 4 | 8 | 1 | 0 | 2.77 | ME |
| 9. Pupils have learned self-direction skills while in their class. | 0 | 2 | 8 | 3 | 0 | 3.08 | ME |
| 10. Have been able to effectively assess pupils' self-direction skills. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| | | | | | AWM | 2.96 | ME |

Legend:



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| | | | | |
|---|---|---|---|---|
| WM | = | weighted mean | | |
| DE | = | descriptive equivalent | | |
| AWM | = | area weighted mean | | |

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

When questioned as to the extent to which the intermediate teachers make their pupils choose for themselves what examples to study or resources to use, three of the school heads checked “limited extent,” nine checked “moderate extent,” and one checked “great extent.” Here, the weighted mean computed is 2.85 which is “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers make their pupils monitor their own progress towards completion of a complex task and modify their work accordingly, two of the school heads mentioned “limited extent,” nine mentioned “moderate extent,” and two mentioned “great extent.” In this item, the weighted mean computed is 3.00 which is pointing to “moderate extent” in the scale.

When questioned as to the extent to which the intermediate teachers make their pupils use specific criteria to assess the quality of their work before it is completed, one of the school heads claimed “limited extent,” nine claimed “moderate extent,” and three claimed “great extent.” The weighted mean computed here is 3.15 which is pointing to “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers make their pupils use peer, teacher or expert feedback to revise their work, three of the school heads mentioned “limited extent,” eight mentioned “moderate extent,” and two mentioned “great extent.” In this item, the weighted mean computed is 2.92 which is pointing to “moderate extent” in the scale.

When questioned as to the extent to which the intermediate teachers have tried to develop pupils’ self-direction skills, four of the school heads claimed “limited extent,” eight claimed “moderate extent,” and one claimed “great extent.” The weighted mean computed here is 2.77 which is pointing to “moderate extent” in the scale.

When queried as to the extent to which most of the pupils of the intermediate teachers have learned self-direction skills while in their class, two of the school heads responded “limited extent,” eight responded “moderate extent,” and three responded “great extent.” The weighted mean computed in this item is 3.08 which is pointing to “moderate extent” in the scale of interpretation.

And, when asked as to the extent to which the intermediate teachers have been able to effectively assess pupils’ self-direction skills, three of the intermediate teachers replied “limited extent,” eight replied “moderate extent,” and two replied “great extent.” The weighted mean computed in this item is 2.92 which is leading to “moderate extent” in the scale.



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Moreover, the computed area weighted mean is 2.96. This implies that the school heads perceived that the intermediate teachers master 21st century teaching skills along self-direction skills to a moderate extent.

**On Global Connection Skills**

The intermediate teachers and their school heads assessed the extent to which the intermediate teachers master 21st century teaching skills along global connection skills.

**Assessment of the Intermediate Teachers.** The assessment of the intermediate teachers on the extent to which they master 21st century teaching skills along global connection skills is presented in Table 16.

As shown in Table 16, when questioned as to the extent to which they make their pupils study information about other countries or cultures, 23 of the intermediate teachers claimed "moderate extent," 77 claimed "great extent," and 16 claimed "very great extent." The weighted mean computed here is 3.94 which is pointing to "great extent" in the scale.

When asked as to the extent to which they make their pupils use information or ideas that come from people in other countries or cultures, 20 of the intermediate teachers replied "moderate extent," 82 replied "great extent," and 14 replied "very great extent." The weighted mean computed in this item is 3.95 which is leading to "great extent" in the scale.

**TABLE 16**
**The Assessment of the Intermediate Teachers on the Extent to which They Master 21st Century Teaching Skills along Global Connection Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| F. Global Connection Skills | VL | LE | ME | GE | VG | | |
| 1. I make my pupils study information about other countries or cultures. | 0 | 0 | 23 | 77 | 16 | 3.94 | GE |
| 2. I make my pupils use information or ideas that come from people in other countries or cultures. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 3. I make my pupils discuss issues related to global interdependency (for example, global environment trends, global market economy). | 0 | 0 | 19 | 81 | 16 | 3.97 | GE |
| 4. I make my pupils understand the life experiences of people in cultures besides their own. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 5. I make my pupils study the geography of distant countries. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 6. I make my pupils reflect on how their own experiences and local issues are connected to global issues. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 7. I have tried to develop pupils' skills in making global connections. | 0 | 0 | 17 | 86 | 13 | 3.97 | GE |
| 8. Most pupils have learned to make global connections while in my class. | 0 | 0 | 23 | 77 | 16 | 3.94 | GE |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9. I have been able to effectively assess pupils' skills in making global connections. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| | | | | | AWM | 3.95 | GE |

Legend:

| | | | | |
|---|---|---|---|---|
| WM | = | weighted mean | | |
| DE | = | descriptive equivalent | | |
| AWM | = | area weighted mean | | |

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

When inquired as to the extent to which they make their pupils discuss issues related to global interdependency (for example, global environment trends, global market economy), 19 of the intermediate teachers responded "moderate extent," 81 responded "great extent," and 16 responded "very great extent." Here, the weighted mean computed is 3.97 which is indicative of "great extent" in the scale.

When questioned as to the extent to which they make their pupils understand the life experiences of people in cultures besides their own, 23 of the intermediate teachers checked "moderate extent," 76 checked "great extent," and 17 checked "very great extent." Here, the weighted mean computed is 3.95 which is "great extent" in the scale.

When asked as to the extent to which they make their pupils study the geography of distant countries, 23 of the intermediate teachers mentioned "moderate extent," 76 mentioned "great extent," and 17 mentioned "very great extent." In this item, the weighted mean computed is 3.95 which is pointing to "great extent" in the scale.

When questioned as to the extent to which they make their pupils reflect on how their own experiences and local issues are connected to global issues, 20 of the intermediate teachers claimed "moderate extent," 82 claimed "great extent," and 14 claimed "very great extent." The weighted mean computed here is 3.95 which is pointing to "great extent" in the scale.

When asked as to the extent to which they have tried to develop pupils' skills in making global connections, 17 of the intermediate teachers mentioned "moderate extent," 86 mentioned "great extent," and 13 mentioned "very great extent." In this item, the weighted mean computed is 3.97 which is pointing to "great extent" in the scale.

When questioned as to the extent to which most of their pupils have learned to make global connections while in their class, 23 of the intermediate teachers claimed "moderate extent," 77 claimed "great extent," and 16 claimed "very great extent." The weighted mean computed here is 3.97 which is pointing to "great extent" in the scale.

And, when queried as to the extent to which they have been able to effectively assess pupils' skills in making global connections, 20 of the intermediate teachers responded "moderate



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extent," 82 responded "great extent," and 14 responded "very great extent." The weighted mean computed in this item is 3.95 which is pointing to "great extent" in the scale of interpretation.

Moreover, the computed area weighted mean is 3.95. This implies that the intermediate teachers perceived that they master 21st century teaching skills along global connection skills to a great extent.

**Assessment of the School Heads.** The assessment of the school heads on the extent to which the intermediate teachers master 21st century skills along global connection skills is presented in Table 17.

**TABLE 17**
**The Assessment of the School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills along Global Connection Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| F. Global Connection Skills: My intermediate teachers/teachers'… | VL | LE | ME | GE | VG | | |
| 1. Make their pupils study information about other countries or cultures. | 0 | 2 | 10 | 1 | 0 | 2.92 | ME |
| 2. Make their pupils use information or ideas that come from people in other countries or cultures. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 3. Make their pupils discuss issues related to global interdependency (for example, global environment trends, global market economy). | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| 4. Make their pupils understand the life experiences of people in cultures besides their own. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 5. Make their pupils study the geography of distant countries. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 6. Make their pupils reflect on how their own experiences and local issues are connected to global issues. | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| 7. Have tried to develop pupils' skills in making global connections. | 0 | 4 | 9 | 0 | 0 | 2.69 | ME |
| 8. Pupils have learned to make global connections while in their class. | 0 | 4 | 8 | 1 | 0 | 2.77 | ME |
| 9. Have been able to effectively assess pupils' skills in making global connections. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| | | | | | AWM | 2.88 | ME |

Legend:
WM = weighted mean
DE = descriptive equivalent
AWM = area weighted mean

Scale:
VL = very limited extent = 1.00 – 1.49
LE = limited extent = 1.50 – 2.49



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| | | | | |
|---|---|---|---|---|
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

As shown in Table 17, when questioned as to the extent to which the intermediate teachers make their pupils study information about other countries or cultures, two of the school heads claimed “limited extent,” 10 claimed “moderate extent,” and one claimed “great extent.” The weighted mean computed here is 2.92 which is pointing to “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers make their pupils use information or ideas that come from people in other countries or cultures, two of the school heads replied “limited extent,” nine replied “moderate extent,” and two replied “great extent.” The weighted mean computed in this item is 3.00 which is leading to “moderate extent” in the scale.

When inquired as to the extent to which the intermediate teachers make their pupils discuss issues related to global interdependency (for example, global environment trends, global market economy), three of the school heads responded “limited extent,” nine responded “moderate extent,” and one responded “great extent.” Here, the weighted mean computed is 2.85 which is indicative of “moderate extent” in the scale.

When questioned as to the extent to which the intermediate teachers make their pupils understand the life experiences of people in cultures besides their own, three of the school heads checked “limited extent,” eight checked “moderate extent,” and two checked “great extent.” Here, the weighted mean computed is 2.92 which is “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers make their pupils study the geography of distant countries, two of the school heads mentioned “limited extent,” nine mentioned “moderate extent,” and two mentioned “great extent.” In this item, the weighted mean computed is 3.00 which is pointing to “moderate extent” in the scale.

When questioned as to the extent to which the intermediate teachers make their pupils reflect on how their own experiences and local issues are connected to global issues, three of the school heads claimed “limited extent,” nine claimed “moderate extent,” and one claimed “great extent.” The weighted mean computed here is 2.85 which is pointing to “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers have tried to develop pupils’ skills in making global connections, four of the school heads mentioned “limited extent” and nine mentioned “moderate extent.” In this item, the weighted mean computed is 2.69 which is pointing to “moderate extent” in the scale.

When questioned as to the extent to which most of the pupils of the intermediate teachers have learned to make global connections while in their class, four of the school heads claimed “limited extent,” eight claimed “moderate extent,” and one claimed “great extent.” The weighted mean computed here is 2.77 which is pointing to “moderate extent” in the scale.



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And, when queried as to the extent to which the intermediate teachers have been able to effectively assess pupils' skills in making global connections, three of the school heads responded "limited extent," eight responded "moderate extent," and two responded "great extent." The weighted mean computed in this item is 2.92 which is pointing to "moderate extent" in the scale of interpretation.

Moreover, the computed area weighted mean is 2.88. This implies that the school heads perceived that the intermediate teachers master 21st century teaching skills along global connection skills to a moderate extent.

**On Local Connection Skills**

The intermediate teachers and their school heads assessed the extent to which the intermediate teachers master 21st century teaching skills along local connection skills.

**Assessment of the Intermediate Teachers.** The assessment of the intermediate teachers on the extent to which they master 21st century teaching skills along local connection skills is presented in Table 18.

As shown in Table 18, when questioned as to the extent to which they make their pupils investigate topics or issues that are relevant to their family or community, 23 of the intermediate teachers claimed "moderate extent," 76 claimed "great extent," and 17 claimed "very great extent." The weighted mean computed here is 3.95 which is pointing to "great extent" in the scale.

When asked as to the extent to which they make their pupils apply what they are learning to local situations, issues or problems, 23 of the intermediate teachers replied "moderate extent," 76 replied "great extent," and 17 replied "very great extent." The weighted mean computed in this item is 3.95 which is leading to "great extent" in the scale.

**TABLE 18**
**The Assessment of the Intermediate Teachers on the Extent to which They Master 21st Century Teaching Skills along Local Connection Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| G. Local Connection Skills | VL | LE | ME | GE | VG | | |
| 1. I make my pupils investigate topics or issues that are relevant to their family or community. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 2. I make my pupils apply what they are learning to local situations, issues or problems. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 3. I make my pupils talk to one or more members of the community about a class project or activity. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 4. I make my pupils analyze how different stakeholder groups or community members view an issue. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 5. I make my pupils respond to a question or task in a way that weighs the concerns of different community | 0 | 0 | 17 | 86 | 13 | 3.97 | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| members or groups. | | | | | | | GE |
| 6. I have tried to develop pupils' skills in making local connections | 0 | 0 | 22 | 75 | 19 | 3.97 | GE |
| 7. Most pupils have learned to make local connections while in my class | 0 | 0 | 26 | 76 | 14 | 3.90 | GE |
| 8. I have been able to effectively assess pupils' skills in making local connections | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| | | | | | AWM | 3.95 | GE |

Legend:

| | | |
|---|---|---|
| WM | = | weighted mean |
| DE | = | descriptive equivalent |
| AWM | = | area weighted mean |

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

When inquired as to the extent to which they make their pupils talk to one or more members of the community about a class project or activity, 23 of the intermediate teachers responded "moderate extent," 76 responded "great extent," and 17 responded "very great extent." Here, the weighted mean computed is 3.95 which is indicative of "great extent" in the scale.

When questioned as to the extent to which they make their pupils analyze how different stakeholder groups or community members view an issue, 23 of the intermediate teachers checked "moderate extent," 76 checked "great extent," and 17 checked "very great extent." Here, the weighted mean computed is 3.95 which is "great extent" in the scale.

When asked as to the extent to which they make their pupils respond to a question or task in a way that weighs the concerns of different community members or groups, 17 of the intermediate teachers mentioned "moderate extent," 86 mentioned "great extent," and 13 mentioned "very great extent." In this item, the weighted mean computed is 3.97 which is pointing to "great extent" in the scale.

When questioned as to the extent to which they have tried to develop pupils' skills in making local connections, 22 of the intermediate teachers claimed "moderate extent," 75 claimed "great extent," and 19 claimed "very great extent." The weighted mean computed here is 3.97 which is pointing to "great extent" in the scale.

When asked as to the extent to which most of their pupils have learned to make local connections while in their class, 26 of the intermediate teachers mentioned "moderate extent," 76 mentioned "great extent," and 14 mentioned "very great extent." In this item, the weighted mean computed is 3.90 which is pointing to "great extent" in the scale.



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And, when questioned as to the extent to which they have been able to effectively assess pupils' skills in making local connections, 20 of the intermediate teachers claimed "moderate extent," 82 claimed "great extent," and 14 claimed "very great extent." The weighted mean computed here is 3.95 which is pointing to "great extent" in the scale.

Moreover, the computed area weighted mean is 3.95. This implies that the intermediate teachers perceived that they master 21st century teaching skills along local connection skills to a great extent.

**Assessment of the School Heads.** The assessment of the school heads on the extent to which the intermediate teachers master 21st century skills along local connection skills is presented in Table 19.

As shown in Table 19, when questioned as to the extent to which the intermediate teachers make their pupils investigate topics or issues that are relevant to their family or community, two of the school heads claimed "limited extent," nine claimed "moderate extent," and two claimed "great extent." The weighted mean computed here is 3.00 which is pointing to "moderate extent" in the scale.

**TABLE 19**
**The Assessment of the School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills along Local Connection Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| G. Local Connection Skills: My intermediate teachers/teachers'… | VL | LE | ME | GE | VG | | |
| 1. Make their pupils investigate topics or issues that are relevant to their family or community. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 2. Make their pupils apply what they are learning to local situations, issues or problems. | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| 3. Make their pupils talk to one or more members of the community about a class project or activity. | 0 | 4 | 9 | 0 | 0 | 2.69 | ME |
| 4. Make their pupils analyze how different stakeholder groups or community members view an issue. | 0 | 1 | 9 | 3 | 0 | 3.15 | ME |
| 5. Make their pupils respond to a question or task in a way that weighs the concerns of different community members or groups. | 0 | 4 | 8 | 1 | 0 | 2.77 | ME |
| 6. Have tried to develop pupils' skills in making local connections. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 7. Pupils have learned to make local connections while in their class. | 0 | 3 | 10 | 0 | 0 | 2.77 | ME |
| 8. Have been able to effectively assess pupils' skills in making local connections | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| | | | | | AWM | 2.89 | ME |

Legend:



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WM = weighted mean
DE = descriptive equivalent
AWM = area weighted mean

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

When asked as to the extent to which the intermediate teachers make their pupils apply what they are learning to local situations, issues or problems, three of the school heads replied "limited extent," nine replied "moderate extent," and one replied "great extent." The weighted mean computed in this item is 2.85 which is leading to "moderate extent" in the scale.

When inquired as to the extent to which the intermediate teachers make their pupils talk to one or more members of the community about a class project or activity, four of the school heads responded "limited extent" and nine responded "moderate extent." Here, the weighted mean computed is 2.69 which is indicative of "moderate extent" in the scale.

When questioned as to the extent to which the intermediate teachers make their pupils analyze how different stakeholder groups or community members view an issue, one of the school heads checked "limited extent," nine checked "moderate extent," and three checked "great extent." Here, the weighted mean computed is 3.15 which is "moderate extent" in the scale.

When asked as to the extent to which the intermediate teachers make their pupils respond to a question or task in a way that weighs the concerns of different community members or groups, four of the school heads mentioned "limited extent," eight mentioned "moderate extent," and one mentioned "great extent." In this item, the weighted mean computed is 2.77 which is pointing to "moderate extent" in the scale.

When questioned as to the extent to which the intermediate teachers have tried to develop pupils' skills in making local connections, three of the school heads claimed "limited extent," eight claimed "moderate extent," and two claimed "great extent." The weighted mean computed here is 2.92 which is pointing to "moderate extent" in the scale.

When asked as to the extent to which most of the pupils of the intermediate teachers have learned to make local connections while in their class, three of the school heads mentioned "limited extent" and 10 mentioned "moderate extent." In this item, the weighted mean computed is 2.77 which is pointing to "moderate extent" in the scale.

And, when questioned as to the extent to which the intermediate teachers have been able to effectively assess pupils' skills in making local connections, two of the school heads claimed "limited extent," nine claimed "moderate extent," and two claimed "great extent." The weighted mean computed here is 3.00 which is pointing to "moderate extent" in the scale.



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Moreover, the computed area weighted mean is 2.89. This implies that the school heads perceived that the intermediate teachers master 21st century teaching skills along local connection skills to a moderate extent.

**On Technology Skills**

The intermediate teachers and their school heads assessed the extent to which the intermediate teachers master 21st century teaching skills along technology skills.

**Assessment of the Intermediate Teachers.** The assessment of the intermediate teachers on the extent to which they master 21st century teaching skills along technology skills is presented in Table 20.

As shown in Table 20, when questioned as to the extent to which they make their pupils use technology or the Internet for self-instruction, 23 of the intermediate teachers claimed "moderate extent," 78 claimed "great extent," and 15 claimed "very great extent." The weighted mean computed here is 3.93 which is pointing to "great extent" in the scale.

When asked as to the extent to which they make their pupils select appropriate technology tools or resources for completing a task, 20 of the intermediate teachers replied "moderate extent," 82 replied "great extent," and 14 replied "very great extent." The weighted mean computed in this item is 3.95 which is leading to "great extent" in the scale.

When inquired as to the extent to which they make their pupils evaluate the credibility and relevance of online resources, 20 of the intermediate teachers responded "moderate extent," 82 responded "great extent," and 14 responded "very great extent." Here, the weighted mean computed is 3.95 which is indicative of "great extent" in the scale.

When questioned as to the extent to which they make their pupils use technology to analyze information (e.g., databases, spreadsheets, graphic programs, etc.), 19 of the intermediate teachers checked "moderate extent," 83 checked "great extent," and 14 checked "very great extent." Here, the weighted mean computed is 3.96 which is "great extent" in the scale.

**TABLE 20**
**The Assessment of the Intermediate Teachers on the Extent to which They Master 21st Century Teaching Skills along Technology Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| H. Technology Skills | VL | LE | ME | GE | VG | | |
| 1. I make my pupils use technology or the Internet for self-instruction. | 0 | 0 | 23 | 78 | 15 | 3.93 | GE |
| 2. I make my pupils select appropriate technology tools or resources for completing a task. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 3. I make my pupils evaluate the credibility and relevance of online resources. | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 4. I make my pupils use technology to analyze | 0 | 0 | 19 | 83 | 14 | 3.96 | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| information (e.g., databases, spreadsheets, graphic programs, etc.). | | | | | | | GE |
| 5. I make my pupils use technology to help them share information (e.g., multi-media presentations using sound or video, presentation software, blogs, podcasts, etc.). | 0 | 0 | 23 | 78 | 15 | 3.93 | GE |
| 6. I make my pupils use technology to support team work or collaboration (e.g., shared work spaces, email exchanges, giving and receiving feedback, etc.). | 0 | 0 | 20 | 82 | 14 | 3.95 | GE |
| 7. I make my pupils use technology to interact directly with experts or members of local/global communities. | 0 | 0 | 17 | 86 | 13 | 3.97 | GE |
| 8. I make my pupils use technology to keep track of their work on extended tasks or assignments. | 0 | 0 | 22 | 75 | 19 | 3.97 | GE |
| 9. I have tried to develop pupils' skills in using technology as a tool for learning | 0 | 0 | 26 | 76 | 14 | 3.90 | GE |
| 10. Most pupils have learned to use technology as a tool for learning while in my class. | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| 11. I have been able to effectively assess pupils' skills in using technology for learning | 0 | 0 | 23 | 76 | 17 | 3.95 | GE |
| | | | | | AWM | 3.95 | GE |

Legend:

| | | |
|---|---|---|
| WM | = | weighted mean |
| DE | = | descriptive equivalent |
| AWM | = | area weighted mean |

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

When asked as to the extent to which they make their pupils use technology to help them share information (e.g., multi-media presentations using sound or video, presentation software, blogs, podcasts, etc.), 23 of the intermediate teachers mentioned "moderate extent," 78 mentioned "great extent," and 15 mentioned "very great extent." In this item, the weighted mean computed is 3.93 which is pointing to "great extent" in the scale.

When questioned as to the extent to which they make their pupils use technology to support team work or collaboration (e.g., shared work spaces, email exchanges, giving and receiving feedback, etc.), 14 of the intermediate teachers claimed "moderate extent," 82 claimed "great extent," and 14 claimed "very great extent." The weighted mean computed here is 3.95 which is pointing to "great extent" in the scale.

When asked as to the extent to which they make their pupils use technology to interact directly with experts or members of local/global communities, 17 of the intermediate teachers



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mentioned “moderate extent,” 86 mentioned “great extent,” and 13 mentioned “very great extent.” In this item, the weighted mean computed is 3.97 which is pointing to “great extent” in the scale.

When asked as to the extent to which they make their pupils use technology to keep track of their work on extended tasks or assignments, 22 of the intermediate teachers mentioned “moderate extent,” 75 mentioned “great extent,” and 19 mentioned “very great extent.” In this item, the weighted mean computed is 3.97 which is pointing to “great extent” in the scale.

When questioned as to the extent to which they have tried to develop pupils’ skills in using technology as a tool for learning, 26 of the intermediate teachers claimed “moderate extent,” 76 claimed “great extent,” and 14 claimed “very great extent.” The weighted mean computed here is 3.90 which is pointing to “great extent” in the scale.

When asked as to the extent to which most pupils have learned to use technology as a tool for learning while in their class, 23 of the intermediate teachers mentioned “moderate extent,” 76 mentioned “great extent,” and 17 mentioned “very great extent.” In this item, the weighted mean computed is 3.95 which is pointing to “great extent” in the scale.

And, when questioned as to the extent to which they have been able to effectively assess pupils’ skills in using technology for learning, 23 of the intermediate teachers claimed “moderate extent,” 76 claimed “great extent,” and 17 claimed “very great extent.” The weighted mean computed here is 3.95 which is pointing to “great extent” in the scale.

Moreover, the computed area weighted mean is 3.95. This implies that the intermediate teachers perceived that they master 21st century teaching skills along technology skills to a great extent.

**Assessment of the School Heads.** The assessment of the school heads on the extent to which the intermediate teachers master 21st century skills along technology skills is presented in Table 21.

As shown in Table 21, when questioned as to the extent to which the intermediate teachers make their pupils use technology or the Internet for self-instruction, three of the school heads claimed “limited extent,” eight claimed “moderate extent,” and two claimed “great extent.” The weighted mean computed here is 2.92 which is pointing to “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers make their pupils select appropriate technology tools or resources for completing a task, two of the school heads replied “limited extent,” nine replied “moderate extent,” and two replied “great extent.” The weighted mean computed in this item is 3.00 which is leading to “moderate extent” in the scale.

When inquired as to the extent to which the intermediate teachers make their pupils evaluate the credibility and relevance of online resources, three of the school heads responded “limited extent,” nine responded “moderate extent,” and one responded “great extent.” Here, the weighted mean computed is 2.85 which is indicative of “moderate extent” in the scale.



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**TABLE 21**
**The Assessment of the School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills along Technology Skills**

| Assessment Items | Responses | | | | | WM | DE |
|---|---|---|---|---|---|---|---|
| H. Technology Skills: My intermediate teachers/teachers'… | VL | LE | ME | GE | VG | | |
| 1. Make their pupils use technology or the Internet for self-instruction. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 2. Make their pupils select appropriate technology tools or resources for completing a task. | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 3. Make their pupils evaluate the credibility and relevance of online resources. | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| 4. Make their pupils use technology to analyze information (e.g., databases, spreadsheets, graphic programs, etc.). | 0 | 2 | 10 | 1 | 0 | 2.92 | ME |
| 5. Make their pupils use technology to help them share information (e.g., multi-media presentations using sound or video, presentation software, blogs, podcasts, etc.). | 0 | 2 | 9 | 2 | 0 | 3.00 | ME |
| 6. Make their pupils use technology to support team work or collaboration (e.g., shared work spaces, email exchanges, giving and receiving feedback, etc.). | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| 7. Make their pupils use technology to interact directly with experts or members of local/global communities. | 0 | 3 | 8 | 2 | 0 | 2.92 | ME |
| 8. Make their pupils use technology to keep track of their work on extended tasks or assignments. | 0 | 2 | 8 | 3 | 0 | 3.08 | ME |
| 9. Have tried to develop pupils' skills in using technology as a tool for learning | 0 | 2 | 10 | 1 | 0 | 2.92 | ME |
| 10. Pupils have learned to use technology as a tool for learning while in their class. | 0 | 3 | 10 | 0 | 0 | 2.77 | ME |
| 11. Have been able to effectively assess pupils' skills in using technology for learning | 0 | 3 | 9 | 1 | 0 | 2.85 | ME |
| | | | | | AWM | 2.92 | ME |

Legend:

WM = weighted mean
DE = descriptive equivalent
AWM = area weighted mean

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |



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When questioned as to the extent to which the intermediate teachers make their pupils use technology to analyze information (e.g., databases, spreadsheets, graphic programs, etc.), two of the school heads checked “limited extent,” 10 checked “moderate extent,” and one checked “great extent.” Here, the weighted mean computed is 2.92 which is “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers make their pupils use technology to help them share information (e.g., multi-media presentations using sound or video, presentation software, blogs, podcasts, etc.), two of the school heads mentioned “limited extent,” nine mentioned “moderate extent,” and two mentioned “great extent.” In this item, the weighted mean computed is 3.00 which is pointing to “moderate extent” in the scale.

When questioned as to the extent to which the intermediate teachers make their pupils use technology to support team work or collaboration (e.g., shared work spaces, email exchanges, giving and receiving feedback, etc.), three of the school heads claimed “limited extent,” nine claimed “moderate extent,” and one claimed “great extent.” The weighted mean computed here is 2.85 which is pointing to “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers make their pupils use technology to interact directly with experts or members of local/global communities, three of the school heads mentioned limited extent,” eight mentioned “moderate extent,” and two mentioned “great extent.” In this item, the weighted mean computed is 2.92 which is pointing to “moderate extent” in the scale.

When asked as to the extent to which the intermediate teachers make their pupils use technology to keep track of their work on extended tasks or assignments, two of the school heads mentioned “limited extent,” eight mentioned “moderate extent,” and three mentioned “great extent.” In this item, the weighted mean computed is 3.08 which is pointing to “moderate extent” in the scale.

When questioned as to the extent to which the intermediate teachers have tried to develop pupils’ skills in using technology as a tool for learning, two of the school heads claimed “limited extent,” 10 claimed “moderate extent,” and one claimed “great extent.” The weighted mean computed here is 2.92 which is pointing to “moderate extent” in the scale.

When asked as to the extent to which most of the pupils of the intermediate teachers have learned to use technology as a tool for learning while in their class, three of the school heads mentioned “limited extent” and 10 mentioned “moderate extent.” In this item, the weighted mean computed is 2.77 which is pointing to “moderate extent” in the scale.

And, when questioned as to the extent to which the intermediate teachers have been able to effectively assess pupils’ skills in using technology for learning, three of the intermediate teachers claimed “limited extent,” nine claimed “moderate extent,” and one claimed “great extent.” The weighted mean computed here is 2.85 which is pointing to “moderate extent” in the scale.



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Moreover, the computed area weighted mean is 2.92. This implies that the school heads perceived that the intermediate teachers master 21st century teaching skills along technology skills to a moderate extent.

**A Summary**

The extent to which the intermediate teachers master 21st century teaching skills as perceived by themselves and by their school is presented in Table 22.

As can be seen in Table 22, all the computed area weighted means in the assessment of the intermediate teachers have a descriptive equivalent of "great extent" in the scale. Conformably, the computed overall weighted mean of 3.95 also has a descriptive equivalent of "great extent" in the scale. This means that the intermediate teachers perceived that generally they master 21st century teaching skills to a great extent. On the other hand, all the computed area weighted means in the assessment of the school heads have a descriptive equivalent of "moderate extent" in the scale. As such, the computed overall weighted mean of 2.94 also has a descriptive equivalent of "moderate extent" in the scale. This implies that the school heads perceived that the intermediate teachers master 21st century teaching skills to a moderate extent only.

**TABLE 22**
**The Extent to which the Intermediate Teachers Master 21st Century Teaching Skills**

| Areas | Assessment of the Intermediate Teachers | | Assessment of the School Heads | |
|---|---|---|---|---|
| | AWM | DE | AWM | DE |
| Critical Thinking Skills | 3.94 | GE | 2.95 | ME |
| Collaboration Skills | 3.95 | GE | 2.95 | ME |
| Communication Skills | 3.95 | GE | 3.03 | ME |
| Creativity and Innovation Skills | 3.94 | GE | 2.95 | ME |
| Self-Direction Skills | 3.95 | GE | 2.96 | ME |
| Global Connection Skills | 3.95 | GE | 2.88 | ME |
| Local Connection Skills | 3.95 | GE | 2.89 | ME |
| Technology Skills | 3.95 | GE | 2.92 | ME |
| OWM | 3.95 | GE | 2.94 | ME |

Legend:

WM = weighted mean
DE = descriptive equivalent
AWM = area weighted mean
OWM = overall weighted mean

Scale:

| | | | | |
|---|---|---|---|---|
| VL | = | very limited extent | = | 1.00 – 1.49 |
| LE | = | limited extent | = | 1.50 – 2.49 |
| ME | = | moderate extent | = | 2.50 – 3.49 |
| GE | = | great extent | = | 3.50 – 4.49 |
| VG | = | very great extent | = | 4.50 – 5.00 |

**Difference between the Perceptions of the Intermediate Teachers and School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills**



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This part of the chapter discusses answers to the third sub-problem of the study which is about the significant difference between the perceptions or assessments of the intermediate teachers and the school heads on the extent to which the intermediate teachers master 21st century teaching skills.

To provide answers to the sub-problem, the researcher worked on the null hypothesis that there is no significant difference between the perceptions or assessments of the intermediate teachers and the school heads on the extent to which the intermediate teachers master 21st century teaching skills. Thereafter, the researcher compared the perceptions or assessments of the perceptions or assessments of the intermediate teachers and the school heads on the extent to which the intermediate teachers master 21st century teaching skills using the t-test. Here, the researcher computed the p value at .05 level of significance. Table 23 presents the results.

**TABLE 23**
**Difference between the Perceptions of the Intermediate Teachers and the School Heads on the Extent to which the Intermediate Teachers Master 21st Century Teaching Skills**

| Areas | Computed p Value | Level of Significance | RM |
|---|---|---|---|
| 21st Century Teaching Skills | 0.00 | 0.05 | S |

Legend:

RM = remarks
S = significant
NS = not significant

As shown in Table 23, when the perceptions or assessments of the intermediate teachers and the school heads on the extent to which the intermediate teachers master 21st century teaching skills are compared, the p value computed is 0.00. This figure is lower than the .05 level of significance. As such, the null hypothesis is rejected. There is a significant difference between the perceptions or assessments of the intermediate teachers and the school heads on the extent to which the intermediate teachers master 21st century teaching skills.

## Relationship between the Profile Variables of the Intermediate Teachers and the Extent to which They Master 21st Century Teaching Skills

This part of the chapter provides answers to the fourth sub-problem of the study which is about the significant relationship between the profile variables of the of the intermediate teachers and the extent to which they master 21st century teaching skills.

To provide answers to the sub-problem, the researcher worked on the null hypothesis that there is no significant relationship between the profile variables of the of the intermediate teachers and the extent to which they master 21st century teaching skills. Thereafter, the researcher correlated the profile variables of the intermediate teachers and the extent to which they master



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21st century teaching skills using the chi-square test of independence in the Microsoft Excel. Here, the researcher computed for the p value and the chi square value at .05 level of significance. Table 24 presents the results.

As shown in Table 24, when the gender of the intermediate teachers and the extent to which they master 21st century teaching skills are correlated, the p value computed is 0.09. This figure is higher than the .05 level of significance. Moreover, the computed chi square value is 2.71. This figure is lower than the chi square critical value of 3.84. This means that there is no significant relationship between the two. Being so, the null hypothesis is accepted. Conformably, it can be said that the extent to which the intermediate teachers master 21st century teaching skills is not influenced by their gender.

**TABLE 24**
**Relationship between the Profile Variables of the Intermediate Teachers and the Extent to which They Master 21st Century Teaching Skills**

| Profile Variables | P Value .05 LS | Chi Square Value | Chi Square Critical Value | RM |
|---|---|---|---|---|
| Gender | 0.09 | 2.71 | 3.84 | NS |
| Civil Status | 0.08 | 3.02 | 3.84 | NS |
| Educational Attainment | 0.01 | 7.39 | 3.84 | S |
| Length of Teaching Experience | 0.02 | 5.55 | 3.84 | S |
| Number of Relevant Trainings Attended | 0.00 | 10.35 | 3.84 | S |

Legend:

RM = remarks
S = significant
NS = not significant

Secondly, when the civil status of the intermediate teachers and the extent to which they master 21st century teaching skills are correlated, the p value computed is 0.09. This figure is higher than the .05 level of significance. Moreover, the computed chi square value is 3.02. This figure is lower than the chi square critical value of 3.84. This means that there is no significant relationship between the two. Being so, the null hypothesis is accepted. Conformably, it can be said that the extent to which the intermediate teachers master 21st century teaching skills is not influenced by their civil status.

Thirdly, when the educational attainment of the intermediate teachers and the extent to which they master 21st century teaching skills are correlated, the p value computed is 0.01. This figure is lower than the .05 level of significance. Moreover, the computed chi square value is 7.39. This figure is higher than the chi square critical value of 3.84. This means that there is a significant relationship between the two. Being so, the null hypothesis is rejected. Conformably, it can be said that the extent to which the intermediate teachers master 21st century teaching skills is influenced by their highest educational attainment.

Fourthly, when the length of teaching experience of the intermediate teachers and the extent to which they master 21st century teaching skills are correlated, the p value computed is 0.02. This figure is lower than the .05 level of significance. Moreover, the computed chi square value is 5.55.



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This figure is higher than the chi square critical value of 3.84. This means that there is a significant relationship between the two. Being so, the null hypothesis is rejected. Conformably, it can be said that the extent to which the intermediate teachers master 21st century teaching skills is influenced by their length of teaching experience.

Lastly, when the number of relevant trainings of the intermediate teachers and the extent to which they master 21st century teaching skills are correlated, the p value computed is 0.00. This figure is lower than the .05 level of significance. Moreover, the computed chi square value is 10.35. This figure is higher than the chi square critical value of 3.84. This means that there is a significant relationship between the two. Being so, the null hypothesis is rejected. Conformably, it can be said that the extent to which the intermediate teachers master 21st century teaching skills is influenced by the number of relevant trainings they attended.

## The Proposed Capacity Building Program on 21st Century Teaching Skills for the Intermediate Teachers of Public Elementary Schools in Calasiao I District

This last part of the chapter provides answers to the last sub-problem of the study which is about the proposed capacity building program on 21st century teaching skills for the intermediate teachers of public elementary schools in Calasiao I District.

To answer the sub-problem, the researcher considered the findings that majority of the intermediate teachers have attended not more than three trainings related with 21st century teaching skills for the past five years, that the number of trainings related with 21st century teaching skills attended by the intermediate teachers influenced the extent to which they master 21st century teaching skills, and that the school heads perceived that the intermediate teachers master 21st century teaching skills to a moderate extent only/

. What follows is the proposed capacity building program.

## The Capacity Building Program on 21st Century Teaching Skills for the Intermediate Teachers of Public Elementary Schools in Calasiao I District

### Program Description

This is a district-based capacity building program on 21st century teaching skills designed for the intermediate teachers of public elementary schools in Calasiao I District to enhance their teaching skills.

### Duration

The district-based capacity building program on 21st century skills is divided into eight different sessions with each session to last for one day.

### Management Level of Program



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The capacity building program on 21st century teaching skills is a district-based program which will be implemented by the district supervisor of Calasiao I District in coordination with the Schools Division Office in Pangasinan I.

**Delivery Mode**

The district-based capacity building program on 21st century skills is to be delivered in an interactive-collaborative-participative manner. The resource speaker is simply to act as a facilitator. More so, lecture/discussion must be limited to a maximum of 30% of the session time.

**Target Personnel**

The target personnel for the district-based capacity building program on 21st century skills are the intermediate teachers of public elementary schools in Calasiao I District.

**Source of Fund**

School MOOE.

**Rationale**

Many nations around the world have undertaken wide-ranging reforms in curriculum and instruction with the intention of better preparing all children for the higher educational demands of life and work in the 21st century. Thus, the question: "What are the skills that young people need to possess in this rapidly changing world and what competencies do teachers need to have to effectively teach those skills?" This question undoubtedly begs for a capacity building program that will equip teachers with the necessary skills and knowledge for them to effectively teach in a 21st century classroom. Hence, this program is created.

**Objectives**

The program aims to improve the 21st century teaching skills of the intermediate teachers of public elementary schools in Calasiao I District.

**Program Matrix**

| Session Title | **Objectives** | Duration |
|---|---|---|
| Training-Workshop on Critical Thinking Skills | At the end of the activity, the intermediate teachers are equipped with the knowledge and skills in developing critical thinking skills of their pupils. | 1 day |
| Training-Workshop on Collaboration Skills | At the end of the activity, the intermediate teachers are equipped with the knowledge and skills in developing collaboration skills of their pupils. | 1 day |
| Training-Workshop on Communication Skills | At the end of the activity, the intermediate teachers are equipped with the knowledge and skills in developing communication skills of their pupils. | 1 day |
| Training-Workshop on | At the end of the activity, the intermediate teachers | 1 day |



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| | | |
|---|---|---|
| Creativity and Innovation Skills | are equipped with the knowledge and skills in developing creativity and innovation skills of their pupils. | |
| Training-Workshop on Self-Direction Skills | At the end of the activity, the intermediate teachers are equipped with the knowledge and skills in developing self-direction skills of their pupils. | 1 day |
| Training-Workshop on Making Global Connection Skills | At the end of the activity, the intermediate teachers are equipped with the knowledge and skills in developing global connection skills of their pupils. | 1 day |
| Training-Workshop on Making Local Connection Skills | At the end of the activity, the intermediate teachers are equipped with the knowledge and skills in developing local connection skills of their pupils. | 1 day |
| Training-Workshop on Technology Skills | At the end of the activity, the intermediate teachers are equipped with the knowledge and skills in developing the skills in using technology as a tool of learning of their pupils. | 1 day |

## CONCLUSIONS

Based on the findings made, the following conclusions were drawn:

1. A typical teacher of public elementary schools in Malasiqui II District has no post-graduate degree, has been teaching for more than 15 years already, and has attended not more than three trainings related with global citizenship education for the past five years.

2. The teachers of public elementary schools in Malasiqui II District perceived that they have advanced level of knowledge on global citizenship education but their school heads perceived that they only competent level of knowledge on global citizenship

3. The perceptions of the teachers and the school heads on the level of knowledge on global citizenship education of the teachers are significantly different from each other.

4. The level of knowledge on global citizenship education of the teachers is influenced their length of teaching experience and the number of relevant trainings they attended.

5. The proposed enhancement training program will improve the level of knowledge on global citizenship education of the teachers.

## RECOMMENDATIONS

Based on the findings made and the conclusions drawn, the following recommendations are offered:

1. The proposed enhancement training program on global citizenship education be implemented in the public elementary schools in Malasiqui II District to enhance the knowledge of the teachers.

2. The implementation of the enhancement training program on global citizenship education in the public elementary schools in Malasiqui II District should be evaluated.

3. Similar study may be conducted by other researchers to validate the findings of the study.

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## APPENDICES

### THE SURVEY-QUESTIONNAIRE FOR THE INTERMEDIATE TEACHERS

January 5, 2024

Dear Colleagues,

Greetings!

The undersigned is conducting a study entitled **"Assessment of the 21st Century Teaching Skills of the Intermediate Teachers of Public Elementary Schools in Calasiao I District"** in partial fulfillment of the degree Master of Arts in Education.

In connection with this, may I respectfully ask you to answer the accompanying sheet honestly and objectively?

Rest assured that your responses will be treated with utmost confidentiality.

Thank you so much.

Respectfully,



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(Sgd.) Luisito C. Jiao
Researcher

---

NAME (Optional): _____

**I. Please provide your profile in the following:**

A. Gender
( ) Male
( ) Female

B. Civil Status
( ) Married
( ) Single
( ) Separated/Widow/er

C. Highest Educational Attainment
( ) Bachelor's Degree
( ) Finished academic requirements in the Master's Degree
( ) Master's Degree
( ) Finished academic requirements in the Doctorate Degree
( ) Doctorate Degree

D. Length of Teaching Experience
( ) 1 – 5 years
( ) 6 – 10 years
( ) 11 – 15 years
( ) more than 15 years

E. Number of Trainings Related with 21st Century Teaching Skills Attended for the Past Five Years:

( ) have not attended any trainings/seminars related with 21st century teaching skills for the past five years
( ) have attended not more than three trainings/seminars related with 21st century teaching skill for the past five years
( ) have attended more than three trainings/seminars related with 21st century teaching skills for the past five years

**II. Please rate the extent to which you master 21st century teaching skills. Please be guided by the following:**

1 = very limited extent
2 = limited extent
3 = moderate extent



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4 = great extent
5 = very great extent

| Assessment Items | Responses | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| A. Critical Thinking Skills | | | | | |
| 1. I ask my pupils to compare information from different sources before completing a task or assignment. | | | | | |
| 2. I ask my pupils to draw their own conclusions based on analysis of numbers, facts, or relevant information. | | | | | |
| 3. I ask my pupils to summarize or create their own interpretation of what they have read or been taught. | | | | | |
| 4. I ask my pupils to analyze competing arguments, perspectives or solutions to a problem. | | | | | |
| 5. I ask my pupils to develop a persuasive argument based on supporting evidence or reasoning. | | | | | |
| 6. I ask my pupils to try to solve complex problems or answer questions that have no single correct solution or answer. | | | | | |
| 7. I have tried to develop pupils' critical thinking skills. | | | | | |
| 8. Most pupils have learned critical thinking skills while in my class. | | | | | |
| 9. I have been able to effectively assess pupils' critical thinking skills. | | | | | |
| B. Collaboration Skills | | | | | |
| 1. I ask my pupils to work in pairs or small groups to complete a task together. | | | | | |
| 2. I ask my pupils to work with other students to set goals and create a plan for their team. | | | | | |
| 3. I ask my pupils to create joint products using contributions from each pupil. | | | | | |
| 4. I ask my pupils to present their group work to the class, teacher or others. | | | | | |
| 5. I ask my pupils to work as a team to incorporate feedback on group tasks or products. | | | | | |
| 6. I ask my pupils to give feedback to peers or assess another pupils' work. | | | | | |
| 7. I have tried to develop pupils' collaboration skills. | | | | | |
| 8. Most pupils have learned collaboration skills while in my class. | | | | | |
| 9. I have been able to effectively assess pupils' collaboration skills | | | | | |
| C. Communication Skills | | | | | |
| 1. I make my pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs). | | | | | |
| 2. I make my pupils convey their ideas using media other than a written paper (e.g., posters, video, blogs, etc.). | | | | | |
| 3. I make my pupils prepare and deliver an oral presentation to the teacher or others. | | | | | |
| 4. I make my pupils answer questions in front of an audience. | | | | | |
| 5. I make my pupils decide how they will present their work or demonstrate their learning. | | | | | |
| 6. I make my pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs). | | | | | |
| 7. I have tried to develop pupils' communication skills. | | | | | |
| 8. Most pupils have learned communication skills while in my class. | | | | | |



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| 9. I have been able to effectively assess pupils' communication skills. | | | | | |
| D. Creativity and Innovation Skills | | | | | |
| 1. I make my pupils use idea creation techniques such as brainstorming or concept mapping. | | | | | |
| 2.. I make my pupils generate their own ideas about how to confront a problem or question. | | | | | |
| 3. I make my pupils test out different ideas and work to improve them. | | | | | |
| 4. I make my pupils invent a solution to a complex, open-ended question or problem. | | | | | |
| 5. I make my pupils create an original product or performance to express their ideas. | | | | | |
| 6. I have tried to develop pupils' creativity and innovation skills. | | | | | |
| 7. Most pupils have learned creativity and innovation skills while in my class. | | | | | |
| 8. I have been able to effectively assess pupils' creativity and innovation skills. | | | | | |
| E. Self-Direction Skills | | | | | |
| 1. I make my pupils take initiative when confronted with a difficult problem or question. | | | | | |
| 2. I make my pupils choose their own topics of learning or questions to pursue. | | | | | |
| 3. I make my pupils plan the steps they will take to accomplish a complex task. | | | | | |
| 4. I make my pupils choose for themselves what examples to study or resources to use. | | | | | |
| 5. I make my pupils monitor their own progress towards completion of a complex task and modify their work accordingly. | | | | | |
| 6. I make my pupils use specific criteria to assess the quality of their work before it is completed. | | | | | |
| 7. I make my pupils use peer, teacher or expert feedback to revise their work. | | | | | |
| 8. I have tried to develop pupils' self-direction skills. | | | | | |
| 9. Most pupils have learned self-direction skills while in my class. | | | | | |
| 10. I have been able to effectively assess pupils' self-direction skills. | | | | | |
| F. Global Connection Skills | | | | | |
| 1. I make my pupils study information about other countries or cultures. | | | | | |
| 2. I make my pupils use information or ideas that come from people in other countries or cultures. | | | | | |
| 3. I make my pupils discuss issues related to global interdependency (for example, global environment trends, global market economy). | | | | | |
| 4. I make my pupils understand the life experiences of people in cultures besides their own. | | | | | |
| 5. I make my pupils study the geography of distant countries. | | | | | |
| 6. I make my pupils reflect on how their own experiences and local issues are connected to global issues. | | | | | |
| 7. I have tried to develop pupils' skills in making global connections. | | | | | |
| 8. Most pupils have learned to make global connections while in my class. | | | | | |



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| 9. I have been able to effectively assess pupils' skills in making global connections. | | | | | |
| G. Local Connection Skills | | | | | |
| 1. I make my pupils investigate topics or issues that are relevant to their family or community. | | | | | |
| 2. I make my pupils apply what they are learning to local situations, issues or problems. | | | | | |
| 3. I make my pupils talk to one or more members of the community about a class project or activity. | | | | | |
| 4. I make my pupils analyze how different stakeholder groups or community members view an issue. | | | | | |
| 5. I make my pupils respond to a question or task in a way that weighs the concerns of different community members or groups. | | | | | |
| 6. I have tried to develop pupils' skills in making local connections | | | | | |
| 7. Most pupils have learned to make local connections while in my class | | | | | |
| 8. I have been able to effectively assess pupils' skills in making local connections | | | | | |
| H. Technology Skills | | | | | |
| 1. I make my pupils use technology or the Internet for self-instruction. | | | | | |
| 2. I make my pupils select appropriate technology tools or resources for completing a task. | | | | | |
| 3. I make my pupils evaluate the credibility and relevance of online resources. | | | | | |
| 4. I make my pupils use technology to analyze information (e.g., databases, spreadsheets, graphic programs, etc.). | | | | | |
| 5. I make my pupils use technology to help them share information (e.g., multi-media presentations using sound or video, presentation software, blogs, podcasts, etc.). | | | | | |
| 6. I make my pupils use technology to support team work or collaboration (e.g., shared work spaces, email exchanges, giving and receiving feedback, etc.). | | | | | |
| 7. I make my pupils use technology to interact directly with experts or members of local/global communities. | | | | | |
| 8. I make my pupils use technology to keep track of their work on extended tasks or assignments. | | | | | |
| 9. I have tried to develop pupils' skills in using technology as a tool for learning | | | | | |
| 10. Most pupils have learned to use technology as a tool for learning while in my class. | | | | | |
| 11. I have been able to effectively assess pupils' skills in using technology for learning | | | | | |

## THE SURVEY-QUESTIONNAIRE FOR THE SCHOOL HEADS

January 5, 2024

Dear School Heads,

Greetings!



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The undersigned is conducting a study entitled **"Assessment of the 21st Century Teaching Skills of the Intermediate Teachers of Public Elementary Schools in Calasiao I District"** in partial fulfillment of the degree Master of Arts in Education.

In connection with this, may I respectfully ask you to answer the accompanying sheet honestly and objectively?

Rest assured that your responses will be treated with utmost confidentiality.

Thank you so much.

Respectfully,

(Sgd.) Luisito C. Jiao
Researcher

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NAME (Optional): _____

**I. Please rate the extent to which you intermediate teachers master 21st century teaching skills. Please be guided by the following:**

1 = very limited extent
2 = limited extent
3 = moderate extent
4 = great extent
5 = very great extent

| Assessment Items | Responses | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| A. Critical Thinking Skills: My intermediate teachers/Teachers'… | | | | | |
| 1. Ask their pupils to compare information from different sources before completing a task or assignment. | | | | | |
| 2. Ask their pupils to draw their own conclusions based on analysis of numbers, facts, or relevant information. | | | | | |
| 3. Ask their pupils to summarize or create their own interpretation of what they have read or been taught. | | | | | |
| 4. Ask their pupils to analyze competing arguments, perspectives or solutions to a problem. | | | | | |
| 5. Ask their pupils to develop a persuasive argument based on supporting evidence or reasoning. | | | | | |
| 6. Ask their pupils to try to solve complex problems or answer questions that have no single correct solution or answer. | | | | | |
| 7. Have tried to develop pupils' critical thinking skills. | | | | | |
| 8. Pupils have learned critical thinking skills while in their class. | | | | | |
| 9. Have been able to effectively assess pupils' critical thinking skills. | | | | | |
| B. Collaboration Skills: My intermediate teachers/Teachers'… | | | | | |
| 1. Ask their pupils to work in pairs or small groups to complete a | | | | | |



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| task together. | | | | | |
| 2. Ask their pupils to work with other students to set goals and create a plan for their team. | | | | | |
| 3. Ask their pupils to create joint products using contributions from each pupil. | | | | | |
| 4. Ask their pupils to present their group work to the class, teacher or others. | | | | | |
| 5. Ask their pupils to work as a team to incorporate feedback on group tasks or products. | | | | | |
| 6. Ask their pupils to give feedback to peers or assess another pupils' work. | | | | | |
| 7. Have tried to develop pupils' collaboration skills. | | | | | |
| 8. Pupils have learned collaboration skills while in their class. | | | | | |
| 9. Have been able to effectively assess pupils' collaboration skills. | | | | | |
| C. Communication Skills: My intermediate teachers/teachers'… | | | | | |
| 1. Make their pupils structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs). | | | | | |
| 2. Make their pupils convey their ideas using media other than a written paper (e.g., posters, video, blogs, etc.). | | | | | |
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| D. Creativity and Innovation Skills: My intermediate teachers/teachers'… | | | | | |
| 1. Make their pupils use idea creation techniques such as brainstorming or concept mapping. | | | | | |
| 2.. Make their pupils generate their own ideas about how to confront a problem or question. | | | | | |
| 3. Make their pupils test out different ideas and work to improve them. | | | | | |
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| E. Self-Direction Skills: My intermediate teachers/teachers'… | | | | | |
| 1. Make their pupils take initiative when confronted with a difficult problem or question. | | | | | |
| 2. Make their pupils choose their own topics of learning or questions to pursue. | | | | | |
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| 4. Make their pupils choose for themselves what examples to study or resources to use. | | | | | |
| 5. Make their pupils monitor their own progress towards completion of a complex task and modify their work accordingly. | | | | | |
| 6. Make their pupils use specific criteria to assess the quality of their work before it is completed. | | | | | |
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| G. Local Connection Skills: My intermediate teachers/teachers'… | | | | | |
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