CHAPTER 7

ANALYSIS OF SURVEY DATA

This section presents the results analysis of students’ responses for the survey questionnaires that measure the impact and usage of CCMG and CTG methods. This chapter consists of three main sections. The first section (7.1) is related to the data analysis and results with reference to the CCMG method’s questionnaires. The second section (7.2) presents the data analysis and results related to the quantitative data of CTG method’s questionnaire. The last section (7.3) provides a summary of the chapter.

7.1 STUDENTS’ VIEWS ON CCMG

The questionnaire items of the CCMG were analyzed to obtain the views of the students on the impact of CCMG in OFKA. To brief about the questionnaire: the CCMG questionnaire was coined to have six questions that obtain the view of the students with respect to CCMG’s impact and usefulness in OFAK. The questionnaire is presented in Appendix 1. The statistically analyzed survey results are presented in this section. Figure 7.1 shows the results of students’ responses on the use of the CCMG program which is based on concept map (CM).

The data collected through the survey questionnaire (N=230) were quantified in the numerical format and then analyzed. The reliability was calculated in order the measure the ‘reliability coefficient of the data’ using
the Cronbach’s Alpha method. The Alpha value calculated was 0.699, which is a reasonably acceptable value.

![Survey Results - CCMG](image)

SDA-Strongly Disagree; DA-Disagree; NAND-Neither Disagree or Agree; A-Agree; SA-Strongly Agree

**Figure 7.1 Rating of Students’ views on Usefulness of CCMG**

Questionnaires were distributed to the students in order to compare their choices on CCMG as an assessment method over the traditional class test. The students were asked to rate the CCMG method of assessment vis-à-vis traditional class tests. Around 86.96 percent of the students agreed that the CCMG method was interesting. Among the students, seven of them accounting 3 percent of entirety were pessimistic about the CCMG method. About 10 percent of the students expressed neutrality for this question item.

The next question item of the questionnaire sought the opinion of the students on the helpfulness of CCMG method in viewing the contents from a new perspective. Close to 80 % of the students agreed that this CCMG method helped them to view the course contents in a new perspective. There
were 15 students (6.52 %) who were pessimistic in this aspect. However, around 16.52% of the students expressed neutrality for this question.

The third question item was to obtain the views from students on whether they liked the CCMG method as an OFKA. This was responded positively by 75.21 percent of the students that they liked this CCMG method introduced as an assessment process. However, around 5.21 % (12 students) expressed their pessimism on this aspect after they used CCMG. Among the students, 19.57 % of the students expressed neutrality for this question.

The students were asked to rate their willingness to use CCMG further with other subjects. Among the 230 students, 83.05 % of the students showed positive response that they are willing to use CCMG for assessing other subjects too. There were 6 students (2.61%) who had responded negatively that they are not willing to use CCMG further. However, around 14.35% (33) of the students expressed neutrality for this question.

It is important to note, that the purpose of any formative assessment process, is to convey the level of students’ understanding of the topic being assessed. In order to obtain the students’ opinion, the next question was coined on this aspect. Among the 230 students, 74.78% of the students agreed that they were able to realistically assess their level of conceptual understanding on the topic with the help of CCMG method as an assessment tool. Among all the students, around 25.22% (58) of the students expressed neutrality for this question. However, there were no students expressed negative responses for this question item.

For any FKA method, its success depends upon providing immediate feedback to the students on the level of understanding reflected through the answer. The next question was on the usefulness of the feedback by the CCMG. Among the 230 students, 73.03% of the students agreed that
the feedback helped them to realize their level of learning. 10.87% (25) of the students expressed neutrality for this question. However, there were 16.08% students expressed negative responses for this question item as they felt that the feedback was not helpful in improving their learning.

7.2 STUDENTS’ VIEWS ON CTG

The CTG survey questionnaires were issued to the students at the end of the CTG assessment. They were asked to respond to the question items presented in the questionnaire. The questionnaire contained question items to obtain the feedback on the perceived usefulness of the CTG method and students’ willingness to use further. The students’ responses to the questionnaire are shown in Figure 6.5.

As mentioned earlier, the CTG survey questionnaires for obtaining the students’ views on various aspects of the CTG method contain ten questions (See Appendix 3). The questions were prepared to collect the opinion on the factors like curiosity, usefulness of the method in OFKA as well as the usefulness of the feedback produced by the system. The following sections present the views of the students with respect to individual questions. In Figure 7.2, a chart comparing the survey results is presented.

The data collected through the survey questionnaire were quantified in the numerical format and then analyzed. The reliability was calculated in order the measure the reliability coefficient of the data using the Cronbach’s Alpha method. The Alpha value calculated was 0.713, which is a reasonably acceptable value.
Figure 7.2 A Chart Showing the Students’ Responses to CTG Survey

The students’ view on the acceptance of CTG method as a novel OFKA method was obtained using the question. Among the 230 students, 90.4% of the students agreed that they liked the CTG method as OFKA tool. Around 6.09% (14) of the students expressed neutrality for this question. However, there were 3.47% (8) students were pessimistic about this aspect.

As this CTG is designed as a game, the next question was to record their opinion, whether the CTG method is interesting to them or not. Among the 230 students, 90.43% students responded positively that the CTG was interesting to them. Around 7.83% students expressed neutrality on this aspect and 1.74% students recorded their negative response that they either disagree or strongly disagree with this question item.

The next item was to obtain the views of the students whether using this CTG in assessment enabled them to think critically or not. The response to this question was as follows: 73.92% of the students expressed positively that CTG, as OFKA method made them to think critically while
constructing the concept tree during the game. However, 10.43 % students of the entirety were pessimistic about the role of CTG in making them to think critically and 15.65 % expressed neutrality for this item.

Similarly, the next question was to obtain the views whether the CTG method enabled the students to understand their level of learning on a topic better or not. 87.82% of the students agreed or strongly agreed that the CTG enabled them to understand the level of learning better. 2.18 % expressed that they felt that CTG did not enable them to understand their level of learning on the topic was concerned. However, 10.00 % of the students expressed neutrality for this question.

The next question was included in the questionnaire to measure the students’ willingness to use it further. Among the 230 students, 77.39% students expressed positive responses that they are willing to use this CTG method with other subjects. Among all the students 1.30 % of the entirety were pessimistic in this aspect while 21.31% students were expressed neutrality.

The next question was included to obtain the students’ views on the role of CTG in identifying their misconceptions on the topics. From the group of 230 students, 93.49 % of them agreed or strongly agreed that this CTG method aided them to identify their misconceptions in the topics concerned. However, 2.60 % students conveyed that the CTG did not help them to identify their misconceptions at all and at the same time 3.91 % students expressed neutrality for question.

The next item on the questionnaire was to record the feedback on the usefulness of CTG to discover learning problems. This was positively responded by 78.26 % as they either agreed or strongly agreed that this CTG helped them in discovering their problems associated with learning the
The following question item was included to record the response on the usefulness of the feedback provided by the system at the end of the assessment. Among the 230 students, around 84.78% students rated positively that the feedback was useful to concentrate on their learning assessment and 3.92% students were pessimistic about this context and 11.30% recorded their neutrality.

Another question on usefulness of the feedback in discovering misconceptions on topics was responded positively by 83.91% students as they agreed that CTG’s feedback was useful in discovering the misconceptions on the topic. Among the students around 2.18% of the students recorded their pessimism about this context. Further to this, 13.91% students expressed neutrality for this question item.

For another question on the usefulness of the feedback in assisting to learn better, 83.05% of the students agreed to that the feedback offered, has helped them to learn the concepts better. 9.56% of the students disagreed that the feedback was helpful to learn better while 7.39% of the students responded neutrally.

7.3 CHAPTER SUMMARY

The survey data were collected through the survey questionnaires for both the OFKA methods namely CCMG and CTG. The question items of the questionnaires were prepared to obtain the views of the students on the acceptance and usefulness of the proposed methods for OFKA. The data of 230 students were analyzed using the SPSS 16.0 for windows. The reliability coefficient for both the survey data were acceptable. The students’ responses
were positive toward all the questions ranging between 70% and 93%. On the negative side the range was from 0% to 20%. Few students from 3.9% to 21% students expressed neutrality for the survey question items.

It is observed from the survey results, that majority of the students liked the innovative method introduced as OFKA tool and were willing to use them for all their subjects. Similarly the usefulness of the feedback was well rated by the students. The survey results show positive ratings by the students for using CCMG and CTG as effective OFKA methods. The results support the argument that the newly proposed OFKA methods are stimulating and enhanced the students’ enthusiasm in learning. It also helps educators to assess the students’ knowledge in a better way. This was evidenced in both questionnaires that students wanted to use both CCMG and CTG in their courses. They also agreed that CCMG and CTG stimulated them to improve their learning.