

Moral education teaching in colleges and universities based on the application of multimedia technology

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Abstract

In the recent past, Due to continuous development in the field of multimedia technology on moral education teaching in colleges and universities, Students interest and enrollment in smart classrooms with multimedia technology are enhancing worldwide due to diverse demands on high end technologies on moral studies for interactive teaching learning process. At present scenario due to inefficient usage of technology for higher education in colleges and universities, teachers and mentors need to educate themselves and improve their way of teaching through interactive sessions with the students than using white board. This research surveys various elements used in multimedia technology such as music, data interpretation, presentation using image, video analytics, animation and user control metrics which attracted lot of attention by the researchers due to its importance on moral education teaching. This research finds firm survey on interactive teaching process using blooms multimedia technology for smart classroom environment which helps to enhance the teaching methodologies of teachers and mentors in colleges and universities. In addition, this paper discusses the advantage and disadvantages of teaching learning process and the importance of blooms multimedia technology rather than writing on the white board. The main objective of this article is focused in improving socialization on moral education with advanced multimedia techniques which reforms higher education.

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Keywords

Moral education, interactive teaching, multimedia technology, smart classroom environment

Introduction

Nowadays, Technology is a double edged sharp sword because in one side it may improve the implementation of moral studies and in other side it may obstruct the implementation.¹ The hindrance is due to lack of knowledge about the intelligent tools usage for teaching and experience in handling interactive sessions with the students.² This creates unhealthy mentality to the students and misleads them with undistinguished network culture. In the present network era, usage multimedia technology helps students to learn things in a smart way and improves their thoughts with new ideas and innovation.³ Meanwhile, improper usage of technology leads students to misuse the intelligent tools due to bad influence on thoughts and ideology which against socialisms.⁴ As college students are in the budding stage in the perspective of age, life and formation stage, usage of technology needs to educate before practice. Tough Traditional mode of teaching played a major role in training and knowledge transfer process where present era are moving towards intelligent tools which causes gradual minimization of white board(WB) usage.⁵ Multimedia technology refers to advanced computing which is mainly focused to play a significant role from preschool to university study.⁶ Multimedia technology uses music, data interpretation, presentation using image, video analytics, and animation and user control metrics to deliver information to the students in a powerful way. In education sector multimedia communication has been accessed by the students in several formats such as animations,⁷ video graphics, computer games,⁸ interactive TV's, virtual realities etc. In education it lets the students to learn various concepts in a serious of presentations, texts and other control modes without lecturer guidance. This rapid development helps to innovate and interpret data in several modes which helps to personalize user environment in a smart way.⁹ However multimedia use in education will not replace teachers and mentor rather it improves the learning strategies when compare to traditional teaching methodologies.¹⁰ In education sector multimedia tools and its application is much focused on specific objectives or in more widespread ways. There has been an increase demand in the field of multimedia technology at all dimension for the students to apply their insight in various fields of study and circumstances. Interactive media applications using blooms taxonomy had extraordinarily impacted the users or students from multiple points of view. They give teachers and mentors to plan consider materials for class room teaching in a more clear and comprehensive ways such as video presentation, animations and so on. Multimedia applications can be created to improve the learning procedure and increment the collaboration among students and teachers. Teachers can make the exercise by utilizing theses intelligent tools and the data is introduced in

assortment ways, where media applications improve the user or students experience and make the students simpler to handle the data without any complications. In this research advantage and disadvantages of teaching learning process and the importance of multimedia technology rather than writing on the white board has been discussed. The main objective of this article is focused in improving socialization on moral education with advanced blooms multimedia techniques which reforms higher education.

The rest of the paper is as follows, the next section illustrates the survey on multimedia technology along with traditional teaching methodologies, then the usage of various tools in blooms multimedia applications to improve teaching learning process on modal education in colleges and universities is described. In the penultimate section, the graphical representation of the survey on the various aspects and parameters used in the multimedia technology is presented. The final section concludes the research with future enhancement in teaching learning process.^{11,12}

The application of multimedia technology presented here can be used for teaching electrical engineering courses also. The electrical engineering teaching faculty will benefit from this paper by learning how different ways of multimedia technology can be used for teaching electrical engineering all courses in all years of bachelors of engineering.

Literature survey

Though present investigation deals with mixed method approach to assess potentiality of Bloom's taxonomy^{13,14} for examining skills of students in colleges and universities on moral studies. The study comprises of questioning skills of the said students based on their involvement and analysis in Bloom's taxonomy with multimedia technology after introducing and provoking them. Pre and post intervention were documented in contrast to previous reports and observations. Moreover, surveys are done for teacher's opinion, regarding those students. Results show degree of excellence in understanding and performance of the students as per their responses. Additionally teachers promoted significantly for student's skill development through modeling activity using Bloom's taxonomy prompts. An obstruction that is found in teacher's use of model is insufficient pedagogical experience. Research figured out that the teachers requires suitable.¹⁵ Continuing Professional development Method (CPM) to empower themselves for upgrading the questioning skills essential for learners, which is appreciated and found useful for learning in Science classrooms.

Teachers are solely responsible for student's questioning, learning, understanding and their performance. Teachers worried about uneasiness of science students for asking questions during teaching and the students who ask questions, are of low value, and generally insensible while teachers are capable to bring forth and revolutionize proposed action of learning and questioning method (LQM)^{16,17} so that the students would overcome this problem by building in skills for

understanding and designing their aim and evidence. It also appeals with student's knowledge to new fresh topic and predominantly shows scientific thinking at higher degree about their subject, it is uncertain whether they will employ it and how effectively they respond to classroom questions.¹⁸ However, the questioning strategy was proclaimed to assist science student for building student's learning skills and are important for strong motivation instead of depending on teachers' inspiring discussions among students in classroom and suggesting and sharing ideas. Moreover, evaluation through questioning strategies can aid shared management and construct understanding between teachers and students.¹⁹ It is to be interrogated that if teachers are familiar and worried with students raised questions, then why that is not the basis to assist students learning question. Potentiality to examine learning and understanding is quite obvious then why it has been deployed sparingly.²⁰ Teachers' view, restricted students awareness, foresight and educational skills could be considered and introduced in the classroom to beat hesitations of asking questions and make science students to learn to interrogate, evaluate and analyze their own questions limited time produced by massive educational modules using multimedia technology and kind of questionnaire and proposed plan (QPP)²¹ by teachers resulted into non-fulfillment. Science students would develop their capacity of evolving varieties of question (of both low and high order), boosted by up gradation and questioning establishes achievements in exams.²² Raised remarkable query is how one can help Science students to grow skill. Blooms taxonomy with multimedia technique incorporates both low and high grade questions and has been stated to compass Students learning skills on moral studies in colleges and universities. If it proved correct, investigation brings concerned questions like how productive is Bloom's taxonomy in emerging Science students' questioning skills. This research authenticates the sustainability of using Bloom's taxonomy with multimedia technology to implement and enabling teachers to contemplate their action concerning development and using questioning skills results in developing learning skills of students on moral education in colleges and universities.

Various tools in multimedia applications to improve teaching learning process on modal education in colleges and universities

As shown in the Figure 1. Blooms ideology is used to guide students in various parameters in developing different questions and think in a different way to handle various works which helps to improve their scientific knowledge using technological tools. This taxonomy without advanced multimedia technology helps student's increase in dependency on teachers in questioning and discussion which has been listed in the Table 1.

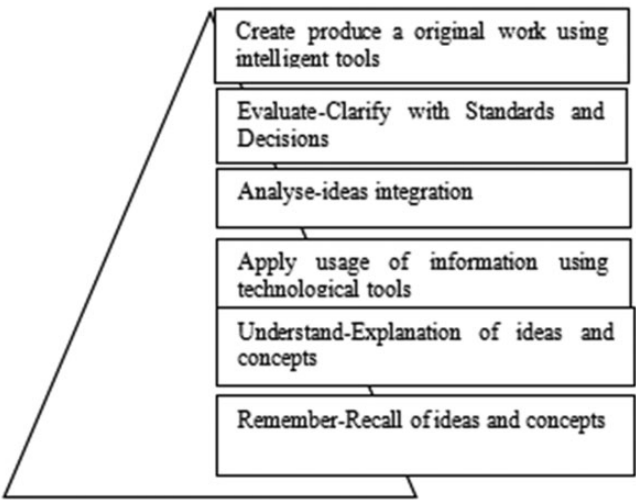


Figure 1. Blooms analogy using multimedia technology.

Table 1. Evaluation of question framing using Blooms approach without multimedia techniques (BWMT).

Parameters	Keywords used	Students reply	Sample framing of questions % level by students
Remember of recall or Knowledge	Assemble, distinguish, narrate, brand	Unable to define and remember	100 out of 20 Students
Understand or Comprehension	Point out, establish, explain, converse	Find hard to comprehend	100 out of 30 Students
Apply or application	Envisage, elucidate, understand, utilize	Objectives has not been satisfied	100 out of 40 Students
Analyse or synthesis	Expand, set up, suggest, mark, classify, preparation.	Comparison, classification has not done effectively using any kind of approach	100 out of 45 Students
Create and evaluate	Join, measure up to, price, contrast, validate	Effectiveness in judging has not been improved	100 out of 50 Students

The complexity associated with science learning of the traditional strategies without the usage of multimedia technology has been revised using blooms taxonomy with voting algorithm strategies as listed below in the Figure 2:

As shown in the Figure 2 When you Design or model or assemble or formulate or construct and develop using teaching tools it gives us promising outcome for teaching learning process. Analyse a design or model helps to organize and examine

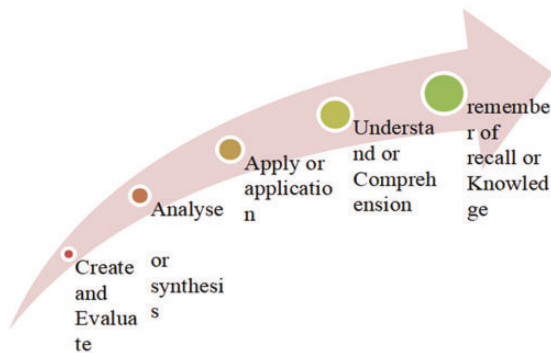


Figure 2. Revised version of Blooms analogy using multimedia tools.

experimental questions in mind during teaching. Execution helps us to interpret the scheduled sketch. Understanding using these tools helps us to locate and report the language in a comprehensive manner. Recall helps to memorize the defined outcomes. This various tools are executed by the mentor using revised version of blooms analogy helps to improve the teaching learning process. Modern day classrooms have all the technologies that are used in delivering any course. Such classrooms that have multimedia playback and recording facilities, internet connectivity, and computers are called smart classrooms. Such classrooms provide teacher a lot of facilities and possibilities to use multimedia teaching aids that make the learning experience enjoyable on moral studies in colleges and universities.

Teaching any courses in a smart classroom can be effective. But, it heavily depends on the teacher's skills in using all the features of a smart classroom judiciously with various taxonomy. Multimedia playback equipment such as projectors can be used to project audiovisual materials. They can be used to show slideshows, movies, and documentaries etc. computers can be used to run computer aided applications. Internet can be used to train students in Computer Mediated Communication. Adequate knowledge and training is required on the part of the teacher to use all the features of a smart classroom using blooms analogy. The teacher should also have adequate awareness in designing and delivering lessons using a smart classroom. The teacher should have necessary knowledge about the best approaches and methodologies that can be adapted in classroom in order to deliver a course effectively in a smart classroom using blooms has been surveyed and sketched for the understanding of teaching learning process on moral studies in colleges and universities.

Advantages and shortcomings of teaching in a smart classroom using Blooms multimedia technique

There are many advantages in teaching in a smart classroom using Blooms version. Creation Pictures of objects along with their names displayed allow the students to

Table 2. Evaluation of revised version in question framing using Blooms multimedia approach (BMA).

Parameters	Keywords used	Students reply	Sample framing of questions % level by students
Remember of recall or Knowledge	Assemble, distinguish, narrate, brand, catalog, learn, remember, describe.	Able to define using cognitive analysis of Voting algorithm	100 out of 60 Students
Understand or Comprehension	Categorize, clarify, point out, establish, distinguish, explain, converse, state	Purpose has been explained	100 out of 70 Students
Apply or application	Show, draft, illustrate, function, observe, agenda, envisage, elucidate, understand, utilize, resolve, utilize, mark	Objectives has been satisfied	100 out of 70 Students
Analyse or synthesis	Position, collect, generate, plan, assemble, compose, expand, set up, suggest, mark, classify, preparation.	Comparison, Classification done effectively using cognitive voting tool approach	100 out of 75 Students
Create and evaluate	Evaluate, reviewer, forecast, judge, join, measure up to, protect choose, approximation, price, contrast, validate	Effectiveness in judging has improved	100 out of 80 Students

grasp and retain words and their meaning easily. Playback of audio allows students to listen to the spoken samples of the language which helps them to predict the things faster than traditional teaching for creative things and analyse. The use of multimedia helps students maintain their concentration and motivation level which helps to apply on several application in a scientific aspects. It caters to the needs of all types of learners – visual, kinesthetic, linguistic learners to implement the application strategies. This analogy helps to improve the knowledge to the students on moral studies in colleges and universities.

There are a few shortcomings in using a smart class; there are rather a few precautions that are to be taken before using a smart classroom. They are; over use of multimedia resources where they are not necessary actually end up distracting the students. The teacher should be well trained in using the technology, and the teacher should arrange for backups to electronic gadgets as they can fault at anytime which may distract thinking ability of students. Students, sometimes, get overcharged and this often results in chaos in the classroom. The teacher should anticipate and control the classroom and urge the students to maintain silence and

discipline during the usage of multimedia technology. The usage of revised cognitive blooms version using multimedia technology has been listed in the Table 2.

As shown in the Table 2, the produced taxonomy using multimedia technology based educational objectives helps students to classify and understand their learning through this technique using cognitive assisted conscious mental activity response. Here voting algorithm has been introduced to train the mind in different aspect to recall and think more faster which helps to students to execute the knowledge starting from simple to complex analogy, Then comprehension of application usage with their analysis and synthesis terminologies are clearly represented in the algorithm.1. as follows,

Algorithm.1. Voting approach using multimedia technology to improve thinking capacity using cognitive approach

Inputs words, punctuation;

Output cognitive outcomes;

Begin

if (Tokenizing="I")

"Cognitive thinking initiated"

$$MI = \log \left(\frac{P(A \& C)}{P(A)_x P(C)} \right)$$

/*Where MI is the mutual information/*

$$\frac{P(A \& C)}{P(A)_x P(C)} = A \text{ is the category which defines the cooccurrence "C" in the mind}$$

$$SA = \log \left(\frac{P(XW-ZY)}{P(A+Z)_x P(Y+Z)_x P(X+Y)_x P(Z+W)} \right)$$

X= Total number of count where co occurrence between A & C;

Y= Total number of count where without co occurrence between A & C;

Z= Total number of count where co occurrence in C **without A**

W= Total number of count neither the co occurrence between A & C;

/*This analogy helps to train the mind to frame innovative questions/*

/* where SA is the statistical analysis/*

$$P = \frac{TP}{TP+FP}$$

P is the Precision with TP= True Positive Value and FP is the False positive value

$$R = \frac{TP}{TP+FN}$$

R is the Recall with TP= True Positive Value and FN is the False negative valueelse

Check(Train the mind again)

End if

End Begin

From the algorithm.1. The cognitive voting techniques which has been Cleary says the training the mind using word or punctuation along with occurrence and non occurrence analogy helps to improve the thinking level of students which has been carried out using multimedia technology. In this algorithm MI and SA has been used to check the co occurrence word or punctuation in students mind and its processing and From the prediction precision and recall parameter used to check the reliability of the mechanisms on moral studies for colleges and universities. This accuracy level helps to implement this system on moral values for colleges and universities which reforms higher education in an effective manner. The Experimental validation shows that proposed blooms based multimedia approach shows promising outcomes in students thinking and learning ability on moral education system as discussed as follows,

Experimental analysis

Throughout the intervention of various analogy students finding enhanced solutions to engage in the development of various multimedia based studies. Our observation shows students using blooms analogy in framing various question on moral studies in colleges and universities improves their scientific ability of thinking more than traditional method of teaching as shown in the Table 3. The precision ratio, recall and accuracy of thinking and prediction have been evaluated in this discussion.

The performance metrics that have been employed in this research work for analyzing the effectiveness of the blooms ideology using multimedia techniques which have been discussed below.

Recall is a measure used to describe the system on students who trained for the prediction of cognitive words or punctuation with efficient manner using blooms taxonomy with multimedia technology. This prediction is evaluated using the ratio of True positive (TP) and Negative values (TN) in comparison with CPM, LQM, and QPP methods are represented in the Figure 3. The Recall is measured as follows in the equation (1), It shows that The cognitive voting techniques which has been carried out in the bloom approach Cleary train the mind using word or

Table 3. Blooms taxonomy ideology on question framing using scientific analogy.

Parameters	Sample question framed by the students and level of percentage in bracket
Remember of recall or Knowledge	100 (70%)
Understand or Comprehension	100 (73%)
Apply or application	100 (75%)
Analyse or synthesis	100 (79%)
Create and evaluate	100 (85%)

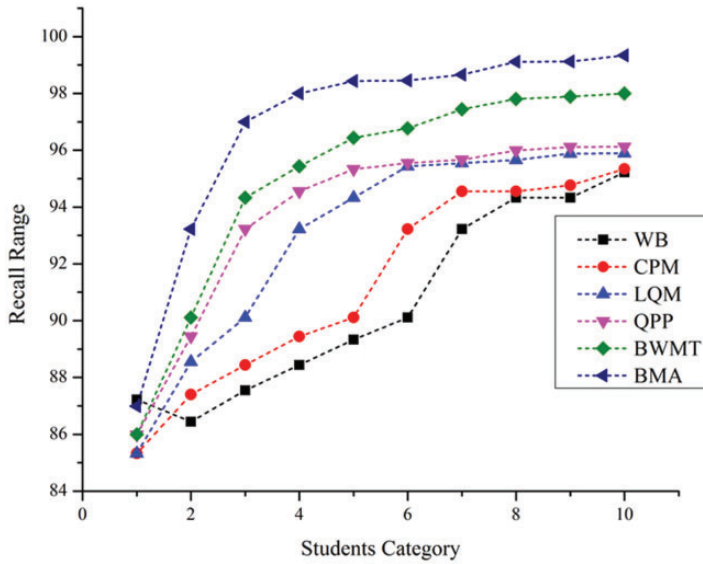


Figure 3. Recall strategy check for the blooms analogy in comparison with traditional methods.

punctuation along with occurrence and non occurrence analogy helps to improve the thinking level of students which has been carried out using multimedia technology.

$$Recall = \frac{TP}{(TP + FN)} \quad (1)$$

Precision measure how the system correctly identify the negative classification of mis prediction during the preprocessing of cognitive words or punctuation and this precision parameter has been evaluated for true positive (TP) and negative (TN) values as represented as follows and the graphical representation shows in the Figure 4, Here voting algorithm has been introduced to train the mind in different aspect with high precision in thinking helps to students to execute the knowledge starting from simple to complex analogy, Then comprehension of application usage with their analysis and synthesis terminologies on moral studies.

$$Precision = \frac{TP}{(TP + FP)} \quad (2)$$

As shown in the Table 4 Mutual information is the measure which is used to measure the dependence between the two random variables. The category of co occurrence in mind mapping has been evaluated for the blooms based education and other techniques. It shows bloom based education has improved MI than other methods due to proper co-occurrence prediction using voting algorithm.

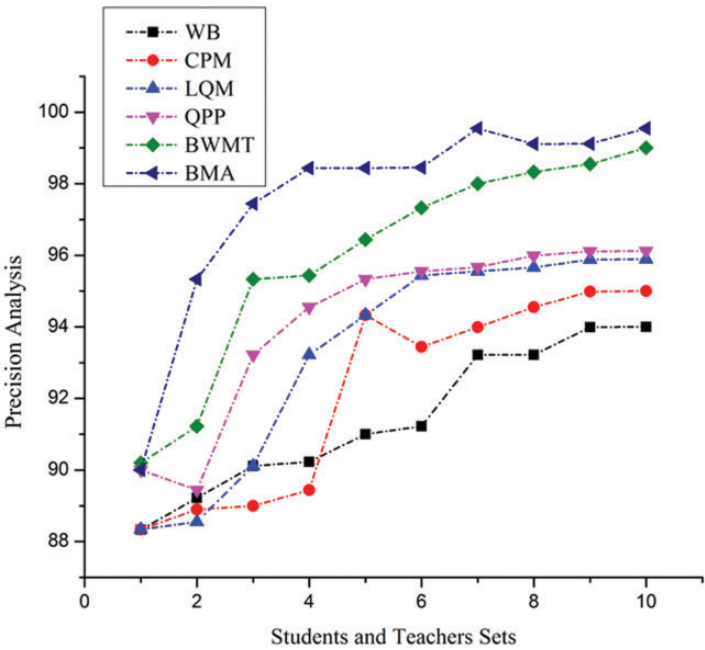


Figure 4. Precision check for the blooms taxonomy using multimedia technology.

Table 4. Mutual information measure.

Students Cluster	WB	CPM	LQM	QPP	BWMT	BMA
Cluster A	1.55	1.59	2.33	2.4	3.65	3.94
Cluster B	1.1	1.5	1.8	1.95	3.61	3.32
Cluster C	0.32	1.3	1.99	2.0	3.78	3.91
Cluster D	1.4	1.5	1.9	2.1	3.94	4.45
Cluster E	1.5	1.58	1.67	2.2	4.0	4.3
Cluster F	1.6	1.78	1.79	2.5	4.55	4.8
Cluster G	1.55	1.59	1.80	2.6	4.67	4.9
Cluster H	1.67	1.70	1.90	2.7	4.90	5.0
Cluster I	1.89	1.90	1.93	2.8	5.1	5.3
Cluster J	1.9	2.1	1.96	2.99	5.2	5.4

The equation (3) shows the mathematical prediction and the graphical representation is shown in the Figure 5

$$MI = \log \left(\frac{P(A \text{ \& } C)}{P(A) \times P(C)} \right)$$

(3)

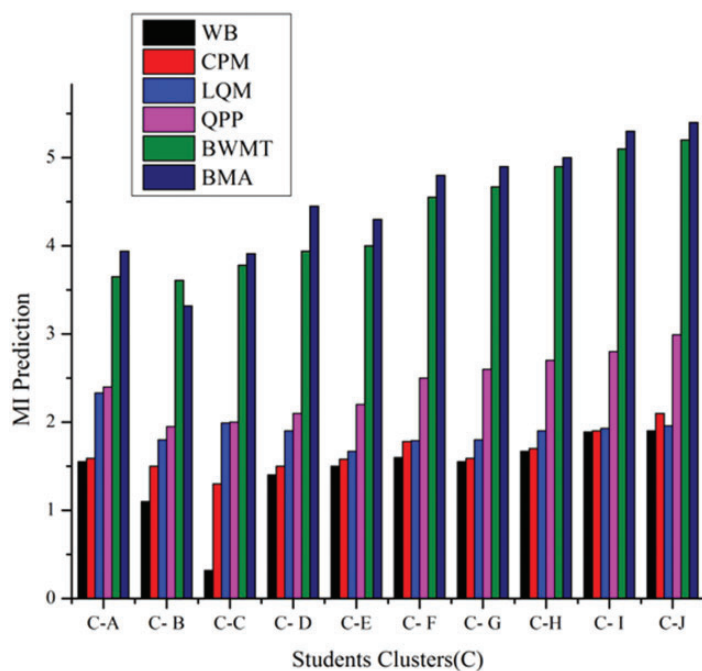


Figure 5. MI analysis.

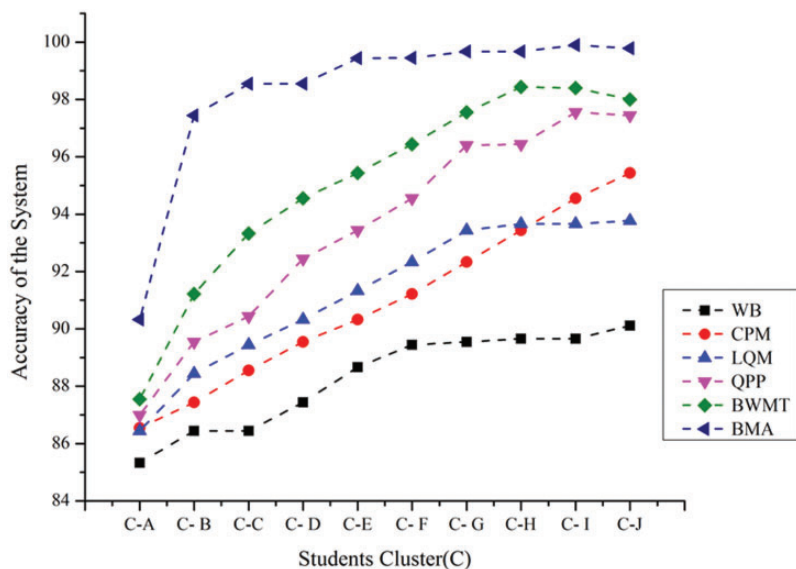


Figure 6. Accuracy metrics for the blooms taxonomy using multimedia technology.

*/**Where MI is the mutual information/***

$$\frac{P(A \& C)}{P(A) \times P(C)} = A \text{ is the category which defines the co occurrence "C" in the mind}$$

Accuracy is statistical measure which is used to analyze how well the system which train the students mind in classifying and Comparing, using cognitive voting tool approach The Blooms ideology helps teachers to recognizes the Mismatched prediction with optimized way than traditional approach. In addition, the accuracy is the proportion of the true results that includes both true positives and true negatives among the total number of cases examined. Then the accuracy value is calculated as follows in the equation (4) and graphical representation of accuracy prediction has been evaluated in the Figure 6.

$$\text{Accuracy} = \frac{N(\text{TP}) + N(\text{TN})}{N(\text{TP} + \text{TN} + \text{FP} + \text{FN})} \quad (4)$$

The experimental analysis with graphical representation of the survey shows the usage of blooms taxonomy with multimedia technology shows promising outcome in teaching learning process on moral education in colleges and universities.

Conclusion and future extension

This research approach studies various elements used in multimedia technology such as music, data interpretation, presentation using image, video analytics, animation and user control metrics with its significance on moral education for colleges and universities. The Proposed Blooms based multimedia technology helps students and teachers to do interactive teaching process in smart classroom environment which helps to enhance the teaching methodologies of teachers and mentors moral education in colleges and universities. The effective implementation of this technology in a smart classroom using revised blooms taxonomy with cognitive approach has been statistically analyzed and sketched for the understanding of teaching learning process on moral studies for higher education system reformation. In Future cognitive process has been further improved using virtual reality approach which may reform the teaching learning process for higher education system.

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