

**IMPACT OF HEURISTIC STYLE OF TEACHING ON STUDENTS
OF MANAGEMENT SCIENCE DEPARTMENT BUKC**

By

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19221

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APPROVAL FOR EXAMINATION

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I, hereby, declare that no portion of the work referred to in this thesis has been submitted in support of any application for another degree or qualification of this university or any other institution of learning.

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ABSTRACT

In this research, the focus was mainly on the impact of heuristic style of teaching. An effort has been made to know the real impact of heuristic methods used in teaching. By heuristic style we mean using different techniques such as case studies, audio-visuals, role-plays, serious games, activities etc. By using these, students are able to learn the complex theories and ideas in more simple and easy way. A questionnaire was made to collect data from students. Sample size of questionnaire was 157 and all the respondents were from Bahria University Management Science department. The nature of this research is exploratory in nature. Linear Regression Analysis was used to test the research hypotheses. We came to conclusion that all the above mentioned techniques are really helpful for learning purposes.

Keywords: Heuristic techniques, teaching, learning

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CHAPTER 1

INTRODUCTION

The word heuristic was used by Armstrong. Pollion and Danker called were the researchers who named it “problem solving”. Heuristic style of teaching is mainly based on psychological principles of trial and error theory. Students and teachers who want to learn by using this strategy should possess good logical and imaginative thinking. It is economical and speedy learning.

“Heurisco” is a Greek word which means “I discover”. Under this strategy students attitude should be towards discovering knowledge by themselves actively. Armstrong (1896) initially started this method for learning. This methodology focuses on student initiative towards experimentation and finding results themselves and works independently, and teacher act as observer. This method makes the student self-reliant and independent.

In this method a situation or crisis is placed in front of students through different means like laboratory or workshop. Teachers and professors job is to start the learning and students are eager to learn during the procedure. Students then try their best efforts by utilizing their all resources and by using their imagination to find the solution of all the problems. . This teaching strategy is based on

- To create dilemma solving approach
- To create scientific approach towards the crisis
- To build ability of self-expression

Its basic principles to provide guidance or teaching as little as possible so in order to emphasis or give confidence to student to learn himself at maximum

The primary objective of this procedure is to

- Inculcate in the students the habit of enquiry and research
- Enable him to listen, to observe to ask and to discover
- Make the learners more specific and, vigilant

In heuristic method the basic idea is to develop the habit of self-learning in the students and to enable them to use and analyse things from more than one angle.

In this style of teaching teachers approach is very important. Teachers approach should be teaching scientific procedures with a question mark. In heuristic style of teaching, the learner is in the place of a self-determining explorer. There will no aid provided by the teacher. Teacher only provides the situation or problem to learners and then only watches how students try to solve the problem.

CHAPTER 2

LITERATURE REVIEW

A research was conducted by (Chamizo, 2012) in which a graphic organizer used heuristic diagrams as an instrument for teaching the past of science. Various drawings and figures were made with the intention of aiding learners (researchers) to comprehend their self-scientific work bearing in mind that enquire and problem-solving are vital to systematic tasks. Mexican science teachers which were not having any experience in discipline of scientific knowledge utilized the heuristic drawings and figures to discover knowledge regarding chemistry keeping in mind the two chronological times: past and present.

Another research which was conducted by (Veermans et al., 2006) which the researcher describes the function heuristic method prop up in helping unearthing learning via simulation based learning. In research a comparison was done of two study scenarios in physics area regarding collision. First setting (implicit heuristics) heuristics are just utilized for assisting the pupil by direction imitative from heuristic, excluding using the heuristics themselves. In the other setting, the heuristics themselves are shown to the students. The outcome showed that the students in the two scenarios got information by before test to after test. By analysis it was concluded that before test outcome can forecast the after test outcome in the implicit heuristic environment however that is not in the explicit heuristic environment.

A research was done by (Hilbert et al., 2008) to know whether heuristic examples help in learning to prove in Geometry. The research was conducted on students (N=110) and it was noted that performance and learning of students was better with heuristic situations as compared to control condition.

A research was conducted by (Pai et al., 2010) case study method was applied in teaching Biology. Biology subject was separated in three parts –ecology (natural science), and biodiversity, each part was planned like a case study. The students found (1) case study method is much better in comparison to the traditional lecture method,(2) Learners inclined towards cases related to human wellbeing (3) Learners which were weak in studies showed more eagerness towards case study procedure than strong students.

In a similar research made by (Kay and Kletschin, 2012) regarding the utilization of dilemma based podcast to teach maths . A series of 69 problem based video podcasts were made and used as self-study tool. Results showed that video podcast was regarded as a really useful, valuable education tool and showed meaningful information increases in pre-calculus area.

In another research which was conducted by (Mak and Hutton, 2014) in which feature film was used to teach political science and international relations to learners belonging to different backgrounds. In review, researchers concluded that using films in teaching political science and international relations ideas to non-majors is an efficient method of building good learning of ideas and theories.

In another study which was done by (Aleksandrov, 2014) in which he pointed out that audio visual technologies provides marvellous room in the progress of learners logical and investigative skills. These tools and technologies can be used in classroom activities and for homework. Analysis of audio-visual is accessible to aid realize the learners' socio-cultural practice schemas. This gives practice and hypothesis accord, expert positions attainment, which provides opportunities for imaginative understanding of expert authenticity.

A research was conducted on use of virtual reality for making extraordinary ecological stimulus in encouraging pupils to exploit imaginative thoughts by (Lau and Lee, 2015).The experimenters noted that it can feasibly increase pupils understanding .Researchers pointed educators make good learning setting for example game based scenarios in order to facilitate learners build optimistic learning attitude in learning process.

A study was conducted by (Bahrani and Sim, 2012) on use of audio visual news as source of language expertise improvement. 57 pupils were chosen on and were placed into three clusters. People of first cluster had experience of audio visual from news, second ad experience to audio visual from cartoons and last group had experience to audio visual from films. Results showed that cluster one (news) unable to enhance its expertise. In comparison, second (cartoons) and third (films) could increase their language expertise. It was clearly noted that audio-visual applications are good for teaching purposes.

A study was conducted by (Furió et al., 2015) on mobile learning versus traditional learning classrooms lessons. Now day's different ways can be adopted for learning. In the study

learning efficiency of students utilizing an iPhone application for understanding versus traditional classroom lesson was done 38 students participated. Results concluded that i-phone procedure got greater output in comparison to the traditional way of teaching; students observed that i-phone application is better in comparison to traditional way of learning.

A study was conducted by (Yang and Xie, 2013) on learning Chinese through iPads. 12 students of second year were selected which tried to learn Chinese from I-pads .The results verified that the textual and visual content of idioms made by heritage learners helped their learning of idioms, and also notifies that learners were amused with this mobile way of learning.

A research study was conducted by (Zan, 2015) on the effects of smart phone use on organic chemical compound learning. Smart phones were used as educational tools in chemistry course that focuses on naming organic chemical compounds. Messages are sent to learner's smart phones which include the names, formulas, pronunciations and usage areas of compounds along with questions. Audio-visual content is sent with these messages to make information more visible. In next stage questions are sent using text messages to evaluate students' understanding in field of naming and writing compounds. Results notified that pupils learning was better by using smart phones for educational purposes and told that learning with smart phone was quicker, feasible, enjoyable and easier than with other learning methods.

A study was done by (Guha, 2013) on science information and knowledge through role playing. It was discussed that to evade a regular class room scenario, instructors mostly try to teach by using role-plays. This is really useful technique as it is vital for facilitators to involve their pupils with knowledge by different procedures. Role-play gives the chance to incorporate multiple senses into a knowledge-based, enjoyable activity. It is observed that role play enables students to put themselves in situation they have never faced before.

A research was conducted by (Aliakbari and Jamalvandi, 2010) on effect of students speaking ability. A study was made which aimed on role-play as an admired procedure in a task based language teaching (TBLT) to ask and show its impact on increasing students' communication skill. It was concluded that there is positive impact of TBLT based role-play method on students speaking ability.

A research study was conducted by (Liu, 2010) on enhancing learners morale in speaking English by role-play. We all know that now days English is used as a tool of communication in getting cultural, scientific and technical knowledge. English learning tasks for verbal English language were made namely verbal English quiz and role play tasks. Main aim was to increase the learners' morale in English communication. Experimenter separated pupils into two clusters— Control group and Target group. Researcher collected information through different means such as interview, questionnaire etc. It was concluded after research that learners in Target cluster which utilized role-play task inclined in speaking English more in comparison with the learners in Control cluster which applied oral English quiz.

A study was conducted by (Knapp, 2012) on learning language by utilizing pictorial art. Article determines the value of visual culture with respect to its pedagogical usage in the German language classroom. Advantages associated with making visual art a part syllabus are discussed. Visual art can be included in Classicism, Romanticism or Expressionism, descriptive writing and basic vocabulary. The closeness of visuals connect interest in a way that increases critical thinking and learning of how language, culture, literature are inseparably connected

A research study was conducted by (Hoffner et al., 2008) on using descriptive videos to enhance writing. In the recent era pupils can easily increase their knowledge and understanding with the aid of technology. Class room's research suggested that expressive programming can increase understanding and for all learners.

A research was conducted by (Fee and Budde-Sung, 2014) on utilizing video successfully for educating purposes. An exploratory study on 236 management students was done regarding utilizing video for teaching purposes. Outcome showed that pupils are normally prone towards audio visual materials. The pupils believed they learned and enjoyed through audio visual materials effectively.

A research was conducted by (Campos-Sánchez et al., 2014) on developing an audio visual notebook as a personal instrument in histology . It was observed that videos can be utilized effectively as didactic instrument for learning in different situation. Four questionnaires with things such as music, text were used to inquire pupils ideas about making of video based on a histological method. Result suggests that use of audio visual study notebook will provide the benefit of personal-learning procedure.

A serious game is a game made for a primary objective other than original entertainment or pleasure. The "serious" classification is generally used to refer to items used by industries like, education, health care, emergency management, city planning, engineering etc

A research study was conducted by (Girard et al., 2013) , in the study it was mentioned that computer-aided learning is successful instrument for increasing knowledge and understanding in learners. In recent times it is observed that emergence of games are in abundance in educational sector.

According to Salt et al. (2008)SGs are primarily made for educational purposes rather than entertainment. Games generally are really helpful in imparting knowledge as learning is quicker, no real loss as it is a game based learning. Learning is easy as students can access from their own computers at any time they want.

Another study was done to verify the positive effect of utilizing digital devices for teaching purposes. A study was conducted by (Ritz, 2015)on the usefulness of utilizing computers in teaching to beginning reading aged 5-12 , results found that a minor positive outcome from utilizing digital devices in comparison to traditional procedure. Researchers have mentioned the usefulness of computer assisted learning in comparison with traditional teaching procedures and have concluded that learning is better through computers.

According to (Mikropoulos and Natsis, 2011)analysed educational virtual environments (EVEs), it became evident that these are useful instruments for teaching purposes as they increase knowledge. It is vital to mention the presence of a large diversity of SGs for example strategy game, adventure games academic knowledge etc. Serious Games are really helpful in teaching complex situations in an easy way. To conclude the outcome, games had a good impact on learning and understanding in comparison with other types of training.

CHAPTER 3

RESEARCH DESIGN & METHODOLOGY

3.1. Type of research

This nature of the research is exploratory research because; researcher has tried to find out the impact of heuristic style of teaching in Bahria University Management Science department

3.2. Research Technique

This research was conducted in a natural setting. A research questionnaire was used to collect data from students. Google forms were used to make questionnaire.

3.3. Respondents of the study

To gather data and views on these issues a survey was conducted to know the exact thinking of students. The respondents were all or some of the following in the random order.

The researcher has used Convenient Sampling technique. Respondents' age was in the range of 18 to 25 years. Most of them were university students and the rest were professional people. Questionnaires were filled by both male and female.

3.4. Sample size

The sample size for the survey was 157 (n=157), all the respondents were from Bahria University Management Science department.

3.5. Research instruments

The instrument to carry out the research work was.

- i. Questionnaires

The researcher has made a questionnaire consists of 16 questions. The questionnaire is starting with a simple introductory question asking respondents that do they like heuristic style of teaching? Then next question was that why they believe that

heuristic style is better than traditional teaching. The researcher has given four options to respondents to select from, in majority of questions researcher have used 5-point Likert scale i.e. Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree.

3.6. Treatment of data

Research was conducted based on the views and opinions of the respondents. . SPSS is used to calculate the frequencies, and also to test the Hypothesis. To test the hypothesis the researcher has applied t-statistics. A thorough analysis of the respondent's judgement on the topic researched was done along with a quantitative analysis in order to facilitate decision making and aid conclusion.

CHAPTER 4

DATA ANALYSIS

Reliability Analysis

Cronbach's alpha test is applied to test the reliability of the data collected from respondents and results are shown in the following table. The variables which are used in test are case studies, audio visuals, role plays, serious games and activities. The result shows the data that has been gathered is and utilized in this research is reliable and respondents answered accurately.

Table 1 Reliability Analysis

Factor	Cronbach's Alpha	N of Items
Case Studies	.738	5
Audio Visuals	.670	5
Role Plays	.801	5
Serious Games	.774	6
Activities	.667	4

Hypothesis Testing

T test will be applied on data collected from questionnaire

1. H0: Case studies do NOT help in understanding complex ideas and concepts by giving examples and scenarios.
H1: case studies help in understanding complex ideas and concepts by giving examples and scenarios

Table 2 One Sample T-Test for Case Studies

	t	df	Sig. (2-tailed)	Test Value = 3		
				Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Case Study (Aggregated)	31.464	156	.000	1.28025	1.1999	1.3606

Since p value is less than 0.01 so we have significant proof to reject null hypothesis alternative hypothesis will be accepted which is as following

1. H1: case studies help in understanding complex ideas and concepts by giving examples and scenarios

So it can be concluded that Case studies help in understanding complex ideas and concepts by giving examples and scenarios.

H0 : Audi visuals do NOT help in summarizing important concepts , facts and information which makes recall and retention easier

H2: Audio visuals help in summarizing important concepts, facts and information which makes recall and retention easier

Table 3 One Sample T-Test for Audio Visuals

	t	df	Sig. (2-tailed)	Test Value = 3		
				Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Audio Visual (Aggregated)	29.511	156	.000	1.21783	1.1363	1.2993

Since p value is less than 0.01 so we have significant proof to reject null hypothesis alternative hypothesis will be accepted which is as following

H2: audio-visuals help in summarizing important concepts, facts and information which makes recall and retention easier

So, it is concluded that audio-visuals help in summarizing important concepts, facts and information which makes recall and retention easier.

H0: Role playing do NOT allows assessment of how well learner understands and can apply what is learned as indicated in their behaviour

H3: Role-playing also allows assessment of how well learner understands and can apply what is learned, as indicated in their behaviour

Table 4 One Sample T-Test for Role Plays

	t	df	Sig. (2-tailed)	Test Value = 3		
				Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Role Play Average (Aggregated)	20.744	156	.000	1.08408	.9808	1.1873

Since p value is less than 0.01 so we have significant proof to reject null hypothesis alternative hypothesis will be accepted which is as following

H3: Role-playing also allows assessment of how well learner understands and can apply what is learned, as indicated in their behaviour

So it is concluded that role playing allows assessment of how well learner understands and can apply what is learned, as indicated in their behaviour

H0: Educational games do NOT offer a safer environment to learn by trial and error

H4: Educational games offer a safer environment to learn by trial and error

Table 5 One Sample T-Test for Serious Games

	t	df	Sig. (2-tailed)	Test Value = 3		
				Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Serious Games (Aggregated)	27.691	156	.000	1.20594	1.1199	1.2920

Since p value is less than 0.01 so we have significant proof to reject null hypothesis alternative hypothesis will be accepted which is as following

H4: Educational games offer a safer environment to learn by trial and error

So it is concluded that Educational games offer a safer environment to learn by trial and error

H0: Activities do NOT help students to learn by doing things practically (such as making advertisements, launching of a brand, selling products, making software, promotional campaigns, mock interviews, public speaking, debating etc).

H5: Activities help students to learn by doing things practically (such as making advertisements, launching of a brand, selling products, making software, promotional campaigns, mock interviews, public speaking, debating etc)

Table 6 One Sample T-Test for Activities

	t	df	Sig. (2-tailed)	Test Value = 3		
				Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Activities (Aggregated)	30.966	156	.000	1.29777	1.2150	1.3806

Since p value is less than 0.01 so we have significant proof to reject null hypothesis alternative hypothesis will be accepted which is as following

H5: Activities help students to learn by doing things practically (such as making advertisements, launching of a brand, selling products, making software, promotional campaigns, mock interviews, public speaking, debating etc)

So it is concluded that Activities help students to learn by doing things practically (such as making advertisements, launching of a brand, selling products, making software, promotional campaigns, mock interviews, public speaking, debating etc)

Descriptive Statistics

Following table shows descriptive statistics of the following factors.

Table 7 Descriptive Statistics

		Case Study (Aggregated)	Audio Visual (Aggregated)	Role Play (Aggregated)	Serious Games (Aggregated)	Activities (Aggregated)
N	Valid	157	157	157	157	157
	Missing	0	0	0	0	0
Mean		4.2803	4.2178	4.0841	4.2059	4.2978
Median		4.4000	4.2000	4.2000	4.3333	4.5000
Mode		4.60	4.20	4.20	4.50	4.50
Std. Deviation		.50983	.51708	.65482	.54568	.52512

CHAPTER 5

CRITICAL DEBATE

There is a great positive impact of using heuristic methods in teaching. First hypothesis says that case studies help in understanding complex ideas and concepts by giving examples and scenarios. Students found out that are really useful in learning complex ideas in a summarized form. By using case studies students are more engaged in subject as compare to the traditional method. The vibrant and useful case study method is the vital instrument used in many famous universities. Through the use of investigative-based business cases, students engage in a procedure of examination of genuine life challenges and problems encountered by firms worldwide. Case method highlights and explains real management issues in companies. Cases are included in teaching for class discussion purposes to give understanding to students of real issues faced in real companies and students are also given chance to play roles of main players in real business situations.

By exposing pupils in business clashes made from real events, cases engross pupils in the tests they are expected to encounter in near future, obstacles that need imaginative investigation with less knowledge. The case study method gives an opportunity to learn by practical experience. Every case gives a chance to the pupils to stand in the position of decision maker, examining and investigating the business situation emerged, taking decisions and deciding a way forward.

The second hypothesis states that audio-visuals help in summarizing important concepts, facts and information which makes recall and retention easier. Students found that audio visuals are really helpful in learning particularly it makes recalling and retention much easier. By using audio visual students are able to learn difficult concepts in easy and simple way and they are able to save their precious time. Earlier researches also concluded the similar findings (Bahrani and Sim, 2012; Kay and Kletskin, 2012)

Audio Visual aids are very helpful for the teaching purposes; these are great tools to gather the audience attention. It is vital to use variety of teaching methods for students with varying preferences(Aleksandrov, 2014). Further, pictorials build a real correspondence between the person who reads and the book. By using visual aids reading becomes quick and readers are more involved with the book through visual aids.

Visual aids can be a good tool to be applied in teaching and it can attract the attention of students. When students study and try to learn new things with the help of visual aids which match to their choice they become thrilled to explain their opinion about it. Because they gather some information from visual aids it is easier to explain in the class. Many teachers agree that by using audiovisuals in teaching the environment of class becomes interactive, and it also creates a balance between talk time of teachers and students.

The third hypothesis states that by using role play in teaching it allows evaluation of how fine student comprehend as shown in their behaviour. Students found that role play is really useful in learning and helps them apply what is learned and the result is found to be consistent with previous literature(Stevens, 2015).

Role play means to experiment with or experience (a situation or viewpoint) by playing a role. It can be very useful for teachers to explain certain situations in a relevant and theatrical manner by using role-plays. By using role plays in teaching it gives a chance to students to play roles of certain characters, debating acting and reasoning. It also enables the students to adapt to new and different situations which they normally might not encounter.

It is not guaranteed that role playing situations might not result as you hope because some pupils are upset and shaky about acting out in a thrilling manner. This could become a reason for role play to be unproductive as one or more pupils will not be able to take part in role play. When pupil feels insecure or embarrassed he will fear what others will think of him, rather of managing the situation.

Meaningful education enlarges beyond the usual training of reading and learning details and needs conceptual connotation and getting a deeper insight of occasions and situations. By using and applying drama teacher not just delivers the details and knowledge of a matter, but can also depict a more glowing picture of the veracity. According to (Bhattacharjee and Ghosh, 2013) role-playing teaching can be divided into four stages: (a) homework and clarification of the task by the educator, (b) research of the tasks by pupils, (c) role-playing tasks to get an improved perception of the state, and (d) conversation of the procedure.

The fourth hypothesis says that educational games offer a safer environment to learn by trial and error .Students found that learning through educational games is really exciting and easy. In this method they can learn in a much safer environment and they do not get bored while learning rather they enjoy while learning. These results were found to be consistent with

previous literature (Girard et al., 2013). Sports competition and video games can be your finest companion to build the data in useful substance. We should make an effort to combine Conventional means with the fresh ones to create our class more appealing that pupils acquire an optimistic understanding of the education process.

Games are participative that involve in recreation which teaches us objectives, regulations, variation, trouble-shooting all characterized as a story. It provide the primary need of education by giving pleasure, stimulus, self-esteem satisfaction, imagination, and sentiment."(Prensky, 2001)

It was analyzed that games initiates a practical, chance that permits participants to vigorously pay attention, build and alter circumstances through concurrently understanding regarding penalty of choice in the situation. As learners become more involved and passionate to do well in the game, they grow to be eager for discovering the situation is taking place in. They try to solve the problem as soon as possible(Ritz, 2015). Education through games is really helpful as students are motivated to learn. Students will enjoy learning as they are learning while playing. It is noted learning is much better through games as students spent many hours at playing games and enjoy this style of learning.

- It is not a very big problem if you lost the game, you can restart the game and play again.
- You can resume the game from the same point where you died or lost in the game and finish your objective.
- In game the characters may be dead but these are not real events.

Game-Based Learning is a procedure of utilizing games while teaching a course or a subject.

Benefits of using games for learning purposes are:

- Learners are attracted towards games as they usually like to play games eagerly.
- Learning through games provides encouragement to the participants and thereby one remains committed to play and consequently learn more without getting bored.
- Students are motivated while playing regarding importance of team work, which is essential part of success in every walk of life.

- Learning through playing has given a new dimension to games that is one learns while playing and he is appreciated for that learning as well.
- In this method participants learn by committing mistakes as in games there are no real events taking place so games provide a safer opportunity to learn and practice new things.

The Fifth Hypothesis states that Activities help students to learn by doing things practically (such as making advertisements, launching of a brand, selling products, making software, promotional campaigns, mock interviews, public speaking, debating etc). Students were of the opinion that these activities gives them practical knowledge and play a vital role in learning and boost their morale and. These results were found to be consistent with previous literature (Zan, 2015)

During learning through activities participants are not just only listening to the lecture given by teacher, but they are trying to grasp the essence of discussion carried out in class by analysing it application and how it can be used in different dimensions of problem solving.(Kay and Kletskin, 2012)

Activities are very important part of the learning process. To engage participants an atmosphere must be created for learners to take part in tasks. Inside class and outside activities that include problems for solving are very vital for provoking participants to use skills imaginatively and make appropriate assignments that can emphasize skills, comprising the ability to: split work, make schedule of activities and managing time, take feedback on performance and make appropriate communication skills.

Activities can aid the participants to make qualities and abilities particular to collaborative efforts inviting participants to delegate roles and responsibilities, manage more difficult situations by themselves, make different tactic to resolve conflicts, find effective peers to emulate etc.

CHAPTER 6

CONCLUSION

According to all calculations and theories teacher's role is to start the learning and create interest in the subject and gather attention of students. Students are eager to learn and proactive throughout the learning process. By utilizing critical thinking they try to find appropriate solutions based on wisdom. They learn by trial and error and get better through experience. This teaching strategy must be used to create scientific perspective of problem solving and to create ability of self-expression.

In this research we have tried to know the impact of heuristic style of teaching, and after the analysis we come to know that heuristic methods of teaching such as case studies, role-play, audio-visual, serious games and activities greatly help in learning.

Heuristic methods makes easier to teach the students and it makes a friendly environment for learning. Lectures become more interesting as compare to traditional lecture based learning and students are more engaged and eager to learn with heuristic techniques.

LIMITATIONS

Due to academic nature work the research was conducted in Bahria University Karachi Campus Management Science department and the sample size was small. The result of this research cannot be used in each subject area and this research does not cover all heuristic styles. All the heuristic methods are not covered in this research.

RECOMMENDATIONS

- Teachers should use heuristic techniques while teaching.
- By using heuristic style of teaching monotony of lecture based teaching is reduced, and it also helps to attract the attention of students.
- Heuristic techniques will enable the teachers to develop a healthy interactive learning environment , in which students will be able to learn latest new things by saving their time and energy,
- Teachers which are teaching theoretical subjects should include heuristic techniques to make their lecture more enriched and meaningful.
- Teachers which are teaching some practical things should include activities, so this will help them to gain the attention of students. They will show more interest in learning and thus will learn easily.
- By introducing heuristic methods teachers will not be teaching in lethargic traditional lecture based style, rather they will try to make their lecture interesting by including latest research and videos regarding to the topic.

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