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Exploring the determinants of student learning style compatibility with offline/online learning methods for management courses in India

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Abstract

Every student is unique and possesses a different learning style to collect, store and retrieve the information stored in his or her mind. Students usually taking preparing notes, reading different study materials, using different sources to gather information, and sometimes using graphs, diagrams, flow charts, etc. to develop understanding. Over the

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years, a paradigm shift has taken place from teaching to learning and various researchers have contributed the development of teaching learning processes and methods that not only engage students but also develop better understanding of subject matter. As each subject is different, it requires a different style of teaching method, just as each learner is different; a specific method used for certain subjects may be suitable for one but not for others. With the advancement of technology, online learning provides sophisticated learning environment, refined course content, scientific teaching methodology, and committed participants, well equipped subject experts, virtual course instructors, and so forth. Although researchers have conducted studies in order to understand why no learning style fits all students, the way students learn and store information. Still, the adoption rate of online courses is discouraging, despite the various benefits online students enjoy. The objective of this article is to explore the determining factors responsible for evaluating the individual learning style of student and their compatibility with learning methods, either offline or online. The researcher has used a case study of 852 students studying in Medi-Caps University, Indore. Responses were collected through structured interviews and the performance of students at the end of the exams. This article tries to address the issue of quality education, and provide the self evaluating technique to determine the method of learning, management course with compatibility of individual learning style.

Subject Classification: *I2.*

Keywords: *Learning style, Online learning, Management courses, Self-evaluating methods.*

1. Introduction

Research on educational psychology is an interesting area for instructors to explore how students' brains learn the subject matter. In the recent digital environment, learners have access to enormous learning content like online certification courses, international universities, self-paced courses and cross-border instructors. The research outcomes integrate key findings for instructors to consider prior to entering the classroom and delivering the subject matter. Tanya Joosten identified the connection between learner characteristics and e-learning readiness, along with outcomes in online courses. A study revealed that students' characteristics and readiness significantly influence learner outcomes, with differences in each group of students [23]. Ryan S. expressed that instructors manage the environment, which motivates students and helps in the building of the latest knowledge, the outcome of reflection on learning, and the transfer of knowledge through social interaction [21]. Not only technology has substantially transformed the education industry, but is also experiencing an organized approach by experts in treating courses as products, delivery as logistics, production as content development, learners as targeted customers and institutions as

organizations. Hence, it is important to diagnose and study the determinants of learner behavior in offline classroom teaching as well as online participation, some important determinants are:

1. Teaching pedagogy based on students' prior knowledge and skills.
2. Thinking about thinking to be developed in the student (Meta-cognition).
3. Learning styles of students to match the course content and adopt resources.
4. Use social activities to deliver subject knowledge.
5. Delivering knowledge with pre-existing information, skills and experiences of students.
6. Delivery of knowledge in new contexts and upcoming situations.

Domains of Learning (Refer Figure-1)

1. **Thinking and Learning:** The crucial principle of psychology in the context of student classroom learning relates to cognition. In other words, the way learners think and learn. Students' perceptions of intelligence and capability to learn, affect their cognitive functioning and education [22]. Learning is always contextual; therefore, standardizing knowledge in new contexts is not instant; rather, instructors require facilitating and teaching subjects through various social experiments. Therefore, interpersonal relationships with students and communication are crucial to subject learning and students' social-emotional development [2]. Developing a conducive environment for session conduct and interpersonal interaction

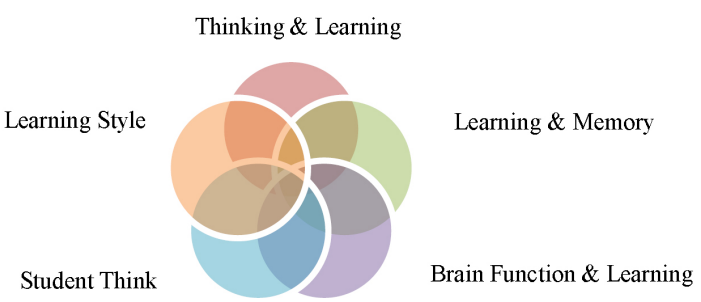

Figure 1
Domains of Learning

can be devised to teach and promote understanding using proven behavior principles and effective classroom instruction.

2. **Learning and memory:** These are two distinct but related theories. Learning is the acquisition of a skill, while memory is the expression of knowledge students have acquired [8]. Another differences are the pace with which the two persons learn and category of memory. The student learns a long-lasting skill gradually with practice whereas instantly replicate behavior in short run and registers in temporary memory.
3. **Brain Function and Learning:** The human brain gradually begins to learn even before the birth of a child. And it continues to mature throughout life, and the two brains do not develop at the same rate [15]. Therefore, teachers and parents must understand that brains gradually mature and influence learning desires. For teachers, this is especially vital while designing session plans and selecting strategies.
4. **Students Think:** Students do not attend the classroom with an empty mind to be filled with instruction and information. Instead, they come to the classroom with considerable knowledge, some correct and some not. Therefore, before delivering a new subject, the instructor must know students' prior knowledge and provide the content depending on whether pre-conceptions agree with or contradict the concepts.
5. **Learning Styles:** Each individual is unique and possesses a different learning style [18]. The famous educational theorist Neil Fleming developed VARK model of Student Learning (Visual, Auditory, Reading/Writing Preference, and Kinesthetic). The VARK model acknowledges that students have distinct approaches in processing information, referred to as "preferred learning modes."

Offline Vs Online Learning

The two distinct methodologies adopted by the education industry since the beginning of the current decade: are online and offline teaching. Online learning disseminates the content using digital devices and teaching methods, while offline instruction takes a more conservative approach. The Covid-19 pandemic has prompted teachers to use online platforms by replacing physical classrooms, and e-learning has become the new regular [1]. Online and offline teaching require students and instructors

in classrooms, whether in a virtual or physical classroom. Whitney Alicia developed the OLSES to research the tasks required to accomplish the knowledge of students with self-paced courses at the university. The experiments were conducted on 338 post-secondary students to measure their online learning experience with the help of a 22 items scale [24]. Online learning has a repository of instructions, information, and knowledge to be provided to students via virtual classrooms, while offline learning refers to having face-to-face interactions with teachers and peer groups. The differentiating factors are the type of classroom, mode of education, instructor's role, student's role, student engagement, student's interpersonal skills, and student's convenience [3]. According to Yu-Hui Tao (2013), the result of experiments show that online learning significantly affects substituting classroom learning but does not reinforce students; while appropriate classroom arrangement can also facilitate substantial face to face learning [26]. The birth of edtech industry is due to demand for professionalism in the delivery of courses and for trained subject instructors possessing deep knowledge of subject matter. The study focuses to validate the conceptual model stated in Figure 2.

Research Methodology

The method to derive determinant of student learning style compatibility with learning mode of management course by developing construct splinted into 3 levels. First 900 members were divided into 2 groups to identify the learning outcomes. Members were asked to identify and determine the most preferred topic of management course in each of the groups. Secondly groups were exposed to both offline and online content related to topic. Finally members were provided with rating scales to express the most essential element that facilitate successful learning mode.

Objectives of Study

1. Identify the individual learning style.
2. Determine the leaning triggers of topic / course.
3. Matching the compatibility of learning style with mode (Online / Offline).

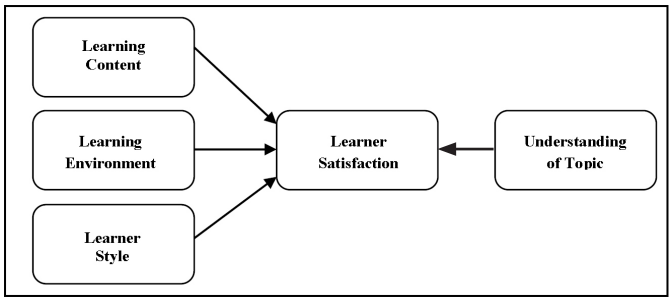

Figure 2

Proposed Model

Results and Discussions

The sample comprised of 852 respondents (students) from two of the most preferred course of management education BBA and MBA of Medi-Caps University, Indore. The sample consists of 358 (42.01%) respondents from BBA program and 494 (57.98%) respondents from MBA program. The majority of respondents were female approx 56.92%, mostly respondents are aged up to 25 years old 728 (85.44%) and from urban areas 670 (78.63%) as mentioned in Table 1.

Table 1

Demographic Characteristic of Respondents

Variables	Category	Count Percentage
Gender	Female 485	56.92%
	Male 367	43.07%
Geographical Belongingness	Rural 182	21.36%
	Urban 670	78.63%
Course Enrolled	BBA 358	42.02%
	MBA 494	57.98%
Age	18–22 years 358	42.01%
	23–25 years 370	43.42%
	over 25 years 124	14.55%

Source Primary Data

Learning Style of Respondents

The individual inventory of learning style possessed by each student was measured using VARK questionnaire. Out of total responses 847 participants submitted their scores as mentioned in Table 2. Qualified participants were provided questionnaire to rate their experience of learning the topics covered in online and class room experiments.

Table 2

Learning Style of Respondents

Variables	Category	Count Percentage
Visual	329	38.84%
Auditory	136	16.05%
Read / Write	169	19.95%
Kinesthetic	213	25.14%

Source Primary Data

Conclusion: Determinants of Learning and Learning Style of Students

Environment of Learning: Both online and traditional classroom settings have benefits and drawbacks, data collected from participant after absorbing topic from online and offline classes 657 (77.56%) students preferred to learn from offline classes with mean 3.42, standard deviation of 1.25 and *t*-value of 2.08 which denotes that learning environment is influenced by mode of classroom setting (refer table-3). Hence hypothesis of "Environment of learning is influenced by learners mode" being accepted.

Content Delivery: Learner domain is consolidation of content delivered by instruction and topics covered. Research reveal that instructor's creativity, content of topic, interesting facts, instruction plan and use of technology makes lecture interesting. In this research experiment contrasting results revealed as mentioned in Table 4, although students prefers to attend offline class room where as their knowledge absorption and content retention is found high in online setting with t-value of 2.08 hence hypothesis "Content delivery is influenced by learning mode" was accepted.

Visual Learning Style: The information presented through visual format to learner refers to Visual learning style. Out of 847 respondents 38.47% students possess visual learning style. Responses collected from 329 student's majority of them were able to recall the content covered in online

classes as they were taught through pictorial tolls of visual stimulation to effectively interpret information. Hence hypothesis 2 being accepted that understanding topic by visual learner is influenced by learning mode.

Auditory Learning Style: Students learning through hearing and listening are categorized Auditory learning is a style. 136 respondents possessing dominating auditory learning style rated online learning setting to be favorable to understand the topic due to less distortion, crisp & clear instructions, and few diversions of discussions, accurate examples and symmetry in instructions. Results of experiment were negative and hypothesis being rejected that "Understanding topic by auditory learner is influenced by learning mode".

Table 3

Independent Samples Test group of degree

Variables							t-test for equality of Means			
	Group	N	Mean	t	df	P	Mean Diff.	Std. Error Dif.	CI 4	
									Lr.	Upr.
Environment of learning	Online	195	3.04	2.37*	847	0.03	0.42	0.11	0.59	1.1
	Offline	657	3.42							
Content Delivery	Online	703	2.87	2.08*	847	0.05	0.39	0.09	0.42	0.85
	Offline	149	2.93							
Visual Style	Online	221	4.16	1.97*	847	0	0.37	0.01	0.41	0.93
	Offline	108	3.85							
Auditory Style	Online	79	2.97	1.87	847	0	0.41	0.01	0.57	1.05
	Offline	57	2.26							
Read / Write Style	Online	88	1.91	1.91	847	0	0.35	0.03	0.42	0.87
	Offline	81	2.61							
Kinesthetic Style	Online	78	3.31	2.11*	847	0.1	0.4	0	0.39	0.98
	Offline	135	4.05							

Source Primary Data

Read / Write Learning Style: Reading and writing is one of the 4 learning styles of the VARK model, learner prefer to read and write to program their mind more effectively. Their learning process consists of a combination of reading to understand the instruction and information where as writing for note-taking to memorize the content. The 169 respondents belonging to read and write learning style remained

undetermined to express whether they had understood the topic from online and offline classes. The *t*-value (1.91) of respondents being rejects the "Understanding topic by read / write learner is influenced by learning mode".

Kinesthetic Learning Style: Students understand the relationships with subject matter by touch, feel and manipulating the combinations are categorized as kinesthetic learning style. Kinesthetic-tactile techniques are used stimulate multi-sensory learning. The 213 students possessing kinesthetic learning out of 847 students with *t*-value of 2.11 accept the hypothesis "Understanding topic by kinesthetic learner is influenced by learning mode".

Table 4

Status of Hypotheses

Hypotheses	No. of Respondents	t-value	Status
$H_0$1: Environment of Learning is influenced by learning mode	847	2.37*	Accepted
$H_0$2: Content delivery is influenced by learning mode	847	2.08*	Accepted
$H_0$3: Understanding topic by Visual learner is influenced by learning mode	329	1.97*	Accepted
$H_0$4: Understanding topic by Auditory learner is influenced by learning mode	136	1.87	Rejected
$H_0$5: Understanding topic by read / write learner is influenced by learning mode	169	1.91	Rejected
$H_0$6: Understanding topic by Kinesthetic learner is influenced by learning mode	213	2.11*	Accepted

Recommendations

The learner's style is vital to deliver the subject matter effectively, as they attend the class with prior knowledge and a pre-determined learning style. A group of students must be formed according to their learning styles and deliverable information corresponding to the delivery method. Learners' environments also influence brain functionality. Therefore, it is required to be managed according to the topic. Swati Sahasrabudhe 2020

noted the importance of creating diversity, innovative pedagogies, co-teaching material using digital platforms, involving students in conducting research, and discussing case studies through webinars and video conferencing. The method can be sustainable if students do not leave their own country but benefit from learning about the partner country [25]. Finally, experiments in the research study were able to establish the relationship between learning style and topics in management. Hence, it recommends continuing the investigations for further analysis of learning determinants.

Scope for Further Study and Social Implication

Results and recommendations of the study summarize the compatibility of determinants of student learning style and teaching methods. Researchers propose to conduct similar studies in different setups as self financed/government-aided agencies and for various different courses/subjects. No doubt technology is facilitating the pace of education dissemination globally. But the researcher proposes further studies to deeply understand the student domain for benefiting society at large and attaining sustainability goal of education worldwide.

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