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Contributions to books

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

Journal and other articles

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.
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- Chandel K.S. (2009): "Ethics in Commerce Education." Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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IMPLICATIONS OF PERCEPTUAL LEARNING STYLE PREFERENCES ON MANAGEMENT PEDAGOGY

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ABSTRACT

Students and teachers have individual learning style preferences in receiving and processing information, which can be assessed using the VARK (Visual, Auditory, Read/Write, Kinesthetic) inventory designed by Neil D. Fleming. In this study which attempted to examine the perceptual learning style preference distribution in management students and teachers and its implications on management pedagogy, and suggest an alternative pedagogical method for management students ,the VARK questionnaire containing 13 items was administered to four hundred and eight business management students and two hundred and fifty teachers. The data indicated that there are no gender differences in the percentages of male and female students who presented unimodal or multiple modes of sensory preferences. The data also showed that there is no significant difference between proportions of female students compared to male students in the specific multiple modes preferences. Regarding the effective areas of learning style preferences the data found that the most frequent bi-modal combination is Aural and Read/write (AR) with 10.3% for both students and teachers. The research found that there is a significant difference in multimodal learning preferences with the teaching experience, and that there is a significant association between career preference and learning preferences of students who, as per the research data, prefer multimodal learning styles more than the single-mode. Hence a judicious combination of all the four learning styles may be considered in a diverse learning environment.

KEYWORDS

Aural, Bi-Modal, Kinesthetic, Multimodal, Perceptual.

INTRODUCTION

The dynamics and complexities of management pedagogy, having far reaching consequences on the education and training of management students, pose a challenge to anyone interested in bringing about a paradigm shift in the current management education scenario. The present inter-disciplinary study covering management and education was motivated by this concern on the part of the researcher to explore the implications of Perceptual Learning Style Preferences on management pedagogy. In the present global education scenario, where management culture and management pedagogy have become synonymous with a way of imparting strategies and getting solutions, students, as "netizens", can access thousands of different topics and titles in a matter of minutes. Yet much of our so called 'modern' and current education system is a legacy of the methods and 'madness' of schooling/teaching developed and nurtured during the British Rule, a system in which the techniques and strategies used by the teachers to interact with and impart knowledge to the students are amazingly outdated (Narendran V. & Narandran.R.:2004). As such the cure needed for the ailing management pedagogy is: the teachers must look for new styles of teaching and students for new styles of learning. The present study, while trying to do the same, compared and analyzed the learning style preference score among teachers of eighteen educational institutions from kindergarten to post-graduate level based on their gender, learning preferences and years of teaching experience, Similarly, the learning style preference score among different groups of management students belonging to four management institutes affiliated to four different universities was also compared and analyzed based on their gender, effective areas of learning style preferences, and professional preference. In examining and analyzing the learning style preference score among teachers and students, and in studying the current management pedagogy trends and techniques, an inventory questionnaire known in the academia as VARK (Visual, Aural, Read/Write and Kinesthetic) inventory questionnaire containing 13 items designed by Neil D. Fleming (Fleming, 2001) was used, as the researcher is of the firm view that management pedagogy, the art of management teaching, the methods and styles of management teaching and learning depend on the learning style preference of management students as well as management faculty.

CONCEPTUAL FRAMEWORK

The conceptual framework for the present study relies on an examination of learning styles literature including VARK which is a questionnaire that provides users with a profile of their learning preferences. These preferences are about the ways that they want to take-in and give-out information. A learning style has 18+ dimensions (preferences for temperature, light, food intake, biorhythms, working with others, deep and surface approaches). VARK is about one preference -our preference for taking in, and putting out information in a learning context. Fleming (1987) developed this model and complimentary identification instrument. It classifies learners by their preferred mode of interaction with others based on input stimulus and output performance. This model facilitates Multimodal-learning styles for those learners with more than one preference. Fleming accompanies the model with Study Strategies for each style and for Multimodal combinations.

VARK divides Learning Styles into four main categories:

(i) **Visual** – pictures, diagrams, video, animation, flowcharts, colors, symbols, lecturers' gestures and graphs.

(ii) **Aural** – lecturer's voices, discussions, verbal explanations, tape recordings, stories and jokes, recall to other people.

(iii) **Read/Write** – lists, headings, dictionaries, glossaries, textbooks, and lecture notes.

(iv) **Kinesthetic** – real experiences, concrete examples, case studies, field trips, laboratory experiments.

REVIEW OF LITERATURE

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Dr. Russell French of the University of Tennessee in Knoxville in the early 1970s formulated a framework of perceptual learning styles. Daryl Gilley, a graduate student of Dr. French, tested students from a classroom within this framework. Another graduate student of Dr. French, Edwin Cherry, revised the framework and then tested others within this refined perceptual learning styles paradigm. The result of this early work in perceptual learning styles was the creation and development of the Multi-Modal Paired Associates Learning Test (MMPALT.). Len Schapier (1983) added yet another study to the body of research on MMPALT, and the instrument and procedures were further refined through research studies conducted at the University of Tennessee, Oklahoma State University, and the University of South Florida over a period of 20 years. By 1995, about 20 graduate students had completed dissertations on the MMPALT and the MMPALT II (a revised version) and Dr. Waynne James (1995) of the University of South Florida in Tampa had published several articles about the MMPALT. Gee (1990) studied the impact of learning style variables in a live teleconference distance education class. The purpose of the study was to examine the influence of student learning style preference, in an on-campus or distance education remote classroom, on student achievement in the following areas: course content, course completion rates, and attitudes about learning. Both distance and on-campus groups were taught simultaneously by the same instructor, received identical course content, and both groups met weekly. Gee administered the Canfield Learning Styles Inventory (CLSI) (Canfield, 1980). James and Gardner (1995) described Kolb's LSI as a cognitive learning style mode. Cognitive processes include storage and retrieval of information in the brain and represent the learner's ways of perceiving, thinking, problem-solving and remembering (p. 20). Dille and Mezack (1991) used Kolb's LSI to identify predictors of high risk among community college telecourse students.

Presently there is little literature available on the effectiveness of perceptual learning style and its implications on management pedagogy. Therefore this study could be a significant contribution to knowledge in this area. It is hoped that the research could also contribute more understanding and awareness on the effectiveness of the perceptual learning style preference in a traditional management classroom and help management educators and trainers to better understand student's perceptions of traditional classrooms in terms of their learning achievements and teacher's methods, in terms of performance and pedagogy.

In exploring the management pedagogy the present study attempted to:

- Identify the perceptual learning style preference distribution in management students.
- Compare the specific multiple learning style preference between genders of management students and faculty members.
- Find out the effective areas of learning style preferences of management students and faculty members.
- Establish the relationship between the teachers' learning preferences and their teaching experience.
- Know the significance of learning styles over the students' career preference.
- Suggest an alternative pedagogical method for management students to reduce the difficulty level in understanding the learning concept.

The study intended to answer the following research questions:

1. Are the management student's active learners or reflective learners?
2. Is the learning of management students gender-neutral?
3. How can the different learning styles influence the learning challenges of management students?
4. Does learning depend on management pedagogy?
5. Is there a relationship between teaching experience and the learning preferences of management faculty?

METHODOLOGY

In an attempt to explore management pedagogy the study examined VARK'S Instrument and its four areas of learning styles preferences namely Visual, Aural, Read/Write and Kinesthetic, which were used as tools to assess and analyze the learning style preference distribution of management students and faculty. In order to achieve the objectives and show the interrelationship between the learning preference distribution and management pedagogy the methodology used in the study focused on

- Research population
- Sample size
- Reliability and Validity of VARK inventory
- The data collection procedure and
- Data analyses.

The methodology and the approach involved a comparative study of learning styles adopted by Montessori / primary/higher primary ,high school teachers, teacher trainees, pre-university(junior) college lecturers, under-graduate college and post graduate department professors, management faculty, and management students belonging to different management institutes. A student questionnaire was used to determine the students' / learners' learning preferences. The student questionnaire has 13 items to measure learning preferences. A Scoring Method constituting four steps was used to calculate the scores, which determine the learning preferences. The first step was to calculate the subtotal of responses for each response type for all 13 questions. Then added the four subtotals to obtain the total score [(a = 3) + (b = 6) + (c = 5) + (d = 9) = 23]. The second step was to sort the scores in an ascending order. The highest score was usually the first learning preference. In this example, response type (d) which represents Kinesthetic had the highest score followed by (b), (c) and (a).The third step was to locate the range category of the total score (23). Four possible ranges were shown with their associated Stepping Distance. In this case, 23 fell within the third range that represented Stepping Distance of 3. The fourth step was to investigate if a single or multiple learning preferences existed. If the first score minus the second score was larger than the stepping distance, then a single preference was assigned. If the second score minus the third score was larger than the stepping distance, then a Bi-Modal preference was selected. If the third score minus the fourth score was larger than the stepping distance then a Tri-Modal preference was assigned. Otherwise, if the third score minus fourth score was smaller than the stepping distance then All Four Preferences was assigned. The research population for the current study included Management Education students (n=408) in medium-sized (50 - 60 enrollment) groups from four Management Institutes. The teachers (n=250) of eighteen educational institutions constituted the research population of teachers.

LIMITATIONS OF THE STUDY

The topic of this study is very vast but the scope of this research is restricted to determining the perceptual learning style preference distribution in management students and faculty using VARK Inventory Categories and also to compare the learning preferences between

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genders among students of four management institutes. As the researcher intended to explore the possibility of finding out an alternative pedagogical method for management students, the data of the student population collected through questionnaire were limited, from the point of view of manageability, to four management institutes belonging to four universities with different syllabi and curriculum. The data collected from the teachers was restricted to the teachers of eighteen educational institutions as the researcher intended to assess the learning style preference of teachers teaching at different levels rather than in greater number of educational institutions. Although students who

DATA ANALYSIS AND INTERPRETATIONS

The following are the analyses and interpretations of the research data. The total number of student responses was tallied for each of the four sensory modalities (V, A, R, K) and for all possible combinations of the modalities (Eg: - VA, VAR, VARK, etc.)

TABLE 1: CROSS TABULATION OF LEARNING PREFERENCES OF MALE AND FEMALE STUDENTS [IN PERCENTAGE]

		V	A	R	K	[BM]	[TM]	[MM]	TOTAL
FEMALE	COUNT	2	25	21	15	44	31	64	202
	PERCENT	1	12.4	10.4	7.4	21.8	15.30	31.7	100
MALE	COUNT	2	29	21	13	41	24	76	206
	PERCENT	1	14.1	10.20	6.30	19.9	11.70	36.9	100
TOTAL	COUNT	4	54	42	28	85	55	140	408
	PERCENT	1.0	13.2	10.3	6.9	20.8	13.50	34.3	100

a.X^2 = 2.426   p=0.877   ns

LEGENDS	
[BM]	Bi-Mode
[TM]	Tri-Mode
[MM]	Multi-mode

participated in the questionnaire emerge from different geographic origins, an attempt was made to maintain accuracy, authenticity and reliability.

SOURCE: FIELD SURVEY 2008-2009

Table 1 identifies the percentages for the dominant unimodal and for the multiple learning modalities for male and female students. A sum of 31.4% of the students was found to have a dominant unimodal sensory learning style. From this group, 1.0% were found to be Visual (V), a percentage of 13.2% presented Aural(A) learning style, 10.3% were found to be Read/Write (R) and 6.9% were Kinesthetic (K). A total of 68.60% of students presented multiple sensory modalities (bi-modal, tri-modal and quad-modal). There were no gender differences in the percentages of male and female students who presented unimodal or multiple modes of sensory preferences. For the aggregate sample of students, the Visual modality was found to be the least frequent, while multiple modalities were the most common. These results indicate the diversity in learning preferences exhibited by the students in the research sample. A total of 20.8% of the students were found to favor two learning styles (10.8% Male Vs 10% Female), 13.5% were found to prefer a combination of three learning styles (8% Male Vs 6.5% Female) and 34.3% were found to be quad-modal (16% Male Vs 19.3% female). Among the male students, 31% were found to be unimodal, while 69% were found to favor a combination of two or more learning modalities. Among the female students, 32% were found to be unimodal, while 68% were found to prefer a combination of two or more sensory modalities.

TABLE 2: CROSS TABULATION OF SPECIFIC MULTIPLE LEARNING STYLES COMBINATION OF STUDENTS BY GENDER [IN PERCENTAGE]

		VARK	VAR	VAK	VRK	ARK	VA	VR	VK	AR	AK	RK	TOTAL
FEMALE	COUNT	64	11	5	3	12	3	3	4	15	13	6	139
	PERCENT	46.0	7.9	3.6	2.2	8.6	2.2	2.2	2.9	10.8	9.4	4.2	100.0
MALE	COUNT	76	5	5	1	13	1	6	2	21	3	8	141
	PERCENT	53.9	3.5	3.5	0.7	9.2	0.7	4.3	1.4	15.0	2.1	5.7	100.0
TOTAL	COUNT	140	16	10	4	25	4	9	6	36	16	14	280
	PERCENT	50.0	5.7	3.6	1.4	8.9	1.4	3.3	2.1	12.9	5.7	5.0	100.0

a. X^2 =14.92   p=0.383   ns

LEGENDS	
V	VISUAL
A	AURAL

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R	READ/WRITE
K	KINESTHETIC

SOURCE: FIELD SURVEY 2008-2009

TABLE 2 shows the percentages of the combinations of specific multiple learning styles of students. For the bi-modal female students, the most frequent combination was the Aural and Read/Write (AR) with 10.8%; followed by the least frequent combination of Visual, Aural (VA) and Visual, Read/Write (VR) with an equal percentage of 2.2%. For the bi-modal male students, the most frequent combination was also the Aural and Read/write (AR) with 15.0% followed by the least frequent combinations of 'VA' with 0.7%. For both male and female tri-modal students, the combination Aural, Read/write and Kinesthetic (ARK) were found to be the most frequent (9.2% for male Vs 8.6% female). And the combination (VRK) Visual, Read/write, Kinesthetic were found to be the least frequent both in male and female tri-modal students. [0.7% for male Vs 2.2% female] However, there was no significant difference between proportions of female students compared to male students in the specific multiple modes preferences. A total of 53.9% of male students and 46.0% of female students were found to be quad-modal, exhibiting no dominant preference for any of the unimodal styles.

TABLE 3: CROSS TABULATION OF SPECIFIC MULTIPLE LEARNING STYLES COMBINATION OF TEACHERS BY GENDER [IN PERCENTAGE]

		VARK	VAR	VAK	VRK	ARK	VA	VR	AR	AK	RK	TOTAL
FEMALE	COUNT	61	3	2	2	15	1	5	12	10	6	117
	PERCENT	52.1	2.6	1.7	1.7	12.8	0.9	4.3	10.3	8.5	5.1	100.0
MALE	COUNT	12	2	0	1	0	0	1	7	0	5	28
	PERCENT	42.9	7.1	0	3.6	0	0	3.6	25.0	0	17.9	100.0
TOTAL	COUNT	73	5	2	3	15	1	6	19	10	11	145
	PERCENT	50.3	3.4	1.4	2.1	10.3	0.7	4.1	13.1	6.9	7.6	100.0

a.X^2=17.44   P=0.042   SIG

LEGENDS	
V	VISUAL
A	AURAL
R	READ/WRITE
K	KINESTHETIC

SOURCE: FIELD SURVEY 2008-2009

TABLE 3 shows the percentages of the combinations of specific multiple learning styles of teachers. For the bi-modal female teachers the most frequent combination was Aural and Read/write (AR) with 10.3% similarly as in the case of students. And the least frequent combination was (VA) Visual and Aural with 0.9%. For the bi-modal male teachers, the most frequent combination was also the Aural and Read/write (AR) with 25% followed by the least frequent combinations of 'VA' and 'AK' with 0%. For the female tri-modal teachers, the combination ARK [Aural, Read/write and Kinesthetic] was found to be the most frequent with 12.8% and the combinations VAK and VRK were equally least frequent with 1.7%. For the male tri-modal teachers, the combination VAR [Visual, Aural and Read/write] was found to be the most frequent with 7.1% and the combinations VAK and ARK were equally least frequent with 0%. A total of 52.1% of female teachers and 42.9% of male teachers were found to be quad-modal learners.

RESEARCH FINDINGS

The data indicated that there are no gender differences in the percentages of male and female students who presented unimodal or multiple modes of sensory preferences. For the aggregate sample of students, the Visual modality was found to be the least frequent, while multiple modalities were the most common. These results indicate the diversity in learning preferences exhibited by the students in the research sample. There was no gender difference in the percentage of male and female students who preferred bi, tri or quad-modal learning styles. Both male and female students were less likely to prefer a unimodal learning style, conversely more likely to prefer multimodal learning style.

There was no significant difference between proportions of female students compared to male students in the specific multiple modes preferences. For female tri-modal teachers, the combination ARK [Aural, Read/write and Kinesthetic] was found to be the most frequent with 12.8% and the combinations VAK and VRK were equally least frequent with 1.7%. But there was a significant difference between proportions of female teachers compared to the male teachers in the tri-mode learning preferences. A total of 52.1% of female teachers and 42.9% of male teachers were found to be quad-modal learners.

Regarding the effective areas of learning style preferences the data found that the most frequent bi-modal combination was Aural and Read/write (AR) with 10.3% for both students and teachers. Among students, a total of 53.9% of male students and 46.0% of female students were found to be quad-modal, exhibiting no dominant preference for any of the unimodal styles. A total of 20.8% of the students were found to favor two learning styles (10.8% Male Vs 10% Female), 13.5% were found to prefer a combination of three learning styles (8% Male Vs 6.5% Female) and 34.3% were found to be quad-modal (16% Male Vs 19.3% female). Among teachers, a total of 52.1% of female teachers and 42.9% of male teachers were found to be quad-modal learners. A total of 18.8% of the teachers were found to favour two learning styles, (14% female Vs 4.8% male), 10% were found to prefer a combination of three learning styles (9% female Vs 1% Male), and 29.2% were found to be quad-modal (24% female Vs 5.2% male).

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There was a significant difference in multimodal learning preferences with the teaching experience. In the unimodal category Read/write was the only one which was pre-dominant irrespective of the teaching experience. In the bi-modal category, the most frequent combination was the 'AR' (Aural, Read/Write). Similarly in the multi-modal category, teachers with 5-10 years of teaching experience had a high dependency on the quad-modal learning styles with 37.5% and teachers above 25 years of experience were least frequent with 7.7%.

A chi-square test for independence was performed to investigate whether an association existed between the professional preference and the categorical variables of single dominant and multimodal learning modalities. Consequently, a significant association between career preference and learning preferences was found among students.

Further, it was found that students prefer multi-modal learning styles more than the single-mode. The multimodal students have a choice when they are taking in and giving out information. Some students who are multimodal can consciously switch over from mode to mode. Since the management students come from diverse background with different level of complexity in understanding the learning concept, two pedagogical methods were suggested namely, Method for retention (VAR) and Method for participation. (VAK) designed by Fleming and Bonewell (2002).

IMPLICATIONS

According to the results of this study,

- Management faculty encounter a broad variety of learning styles in today's classrooms.
- Both male and female students prefer multimodal learning preferences more than unimodal learning preferences.
- There is no significant difference between proportions of female students compared to male students in the specific multiple modes preferences.
- The majority of the students present multiple sensory modalities (tri-mode and multi-mode).
- There is a great variation in learning preferences in the management classrooms. This has important implications and consequences for instruction in management schools.
- There is a significant difference in multimodal learning preferences with the teaching experience.
- Management classrooms are populated with diverse unimodal and multi-modal learners.
- Students prefer multi-modal learning styles more than the single-mode.
- There is a significant association between a student's career preference and his learning preferences.

These implications throw light on the pedagogical challenges that the management faculty has to face in the current management education scenario. As the management encounters a broad variety of learning styles in today's classrooms they have got to find newer and newer techniques of receiving and processing information and imparting knowledge. The fact that both male and female students prefer multimodal learning preferences more than unimodal learning preferences points at the fact that management teacher's instructional methods should also be multimodal and cannot afford to be unimodal. The great variation in learning preferences in management classrooms speaks volumes for the need for an equally great variation in the teaching modes in management classrooms. The significant difference in multimodal learning preferences with the teaching experience of the faculty suggests the need for special and different faculty development programs for Junior and senior management faculty to be conducted regularly before the introduction of new management curriculum and updated courses. When the management classrooms are populated with diverse unimodal and multi-modal learners, the same level of diversity in instructional methods could make the process of learning on the part of the students a pleasure and not a matter of pressure, and a celebration and not a matter of suffocation. And the fact that there is a significant association between a student's career preference and his learning preferences suggests the significance of job-oriented and career-oriented courses to be updated depending on the global job market and the local recruitment requirements.

CONCLUSION

As the global management education scenario is changing rapidly, management students should try to adapt visual and kinesthetic learning style preferences, as these would make them less dependent on the faculty and the library of the institute. At the same time, they can get the practical exposure to be self-equipped before entering any real-time working environment. Hence it will be a pre-defined preparation to approach the modern competitive business world. By considering only the Aural and Read/write learning preferences, students can gain more and more information but will not gain practical experience and latest industrial exposure if the other two learning style preferences are overlooked. This may, in turn, affect their own career development. Hence, a judicious combination of all the four learning styles may be considered in a diverse learning environment. Research in Management pedagogy has not kept pace with research on other areas of management like human resource management, marketing or finance. This study was an attempt to contribute to this area with its focus on the implications of perceptual learning style preferences of management students and faculty on management pedagogy. After going through the data analyses and research findings the following remarks are made: According to the results of this study, management faculty encounter a broad variety of learning styles in today's classrooms. This is an academic challenge for them as they have to adapt multimodal instructional methods to match the variety of their learning styles, as both male and female students prefer multimodal learning preferences more than unimodal learning preferences and present multiple sensory modalities (tri-mode and multi-mode). A great variation in learning preferences is found in the management classroom and this has important implications and consequences for instruction in management schools. Moreover, the significant difference found in multimodal learning preferences with the teaching experience could have important implications for the planners of faculty development programs, just as the significant association between a student's career preference and his learning preferences is an important factor to be considered in curriculum design and choice of pedagogical spaces. Today's modern classrooms enhance the learning styles of students with the advent of laptop computers, networks, video conferencing, distance learning through VSAT, the Internet and wireless technologies. The role of technology has become quite significant in a constantly changing management educational scenario. Computer technology provides students and teachers with unprecedented opportunities to transform the teaching and learning process. Whether it has positive implications on the learning or not remains incomplete. This is a point to be taken up for discussion by future scholars and research students who work in a global academic environment where marketability of certain topics taught in the management courses changes at a very fast pace and where the faculty have to work hard to keep themselves updated academically, pedagogically and intellectually with the latest trends in management education.

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RECOMMENDATIONS

A study of relationships between student's career preference and their learning preferences may be taken up to examine how management pedagogy could be modified to suit the learning demands of career-oriented students.

A demographic study of management students could be pursued to find out if students coming from different regions show different perceptual learning style preferences, and if they do, then, how can pedagogic strategies be suitably modified to facilitate learning in such demographically diverse groups.

The relationships between students' perceptual learning style preferences, pedagogical methods and student performance are to be researched. For example, if students are placed in groups, how might performance and learning outcomes differ between groups with a unimodal learning style and those with a multimodal learning style.

What about the significant difference in multimodal learning preferences with the teaching experience of the faculty? A study of how faculty development programs can be designed and executed depending on the difference in multimodal learning preferences of the faculty with their teaching experience could prove to be useful for future researchers.

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