

Article

# Are Active Teaching Methods Suitable for All Generation Y students?—Creativity as a Needed Ingredient and the Role of Learning Style

Nina Pološki Vokić  and Ana Aleksić \* 

Faculty of Economics and Business, University of Zagreb, 10000 Zagreb, Croatia; npoloski@efzg.hr

\* Correspondence: aaleksic@efzg.hr; Tel.: +385-1-238-3237

Received: 17 March 2020; Accepted: 23 March 2020; Published: 25 March 2020



**Abstract:** Active teaching methods are emphasized as an important part of an effective teaching process for Generation Y students. Still, some individual characteristics, such as creativity and learning style, need to be considered as they can affect outcomes of the learning process. Empirical research on the students' preferences for various active and passive teaching methods was done on a sample of graduate students from the Faculty of Economics and Business in Zagreb. Perceptions of students regarding 52 individual teaching methods, and teaching methods bundles were investigated. Findings reveal that more creative students, as well as activists and pragmatists, and especially reflectors while learning, do exhibit the greater inclination towards active teaching methods.

**Keywords:** active teaching methods; passive teaching methods; creativity; learning styles; Honey and Mumford's learning style questionnaire

## 1. Introduction

Preferences of students in the teaching and learning process transformed considerably in the last decade, especially as Generation Y students entered the academic world [1,2]. This generation, as a result of its living environment, developed new attitudes and aptitudes [3], as well as different preferences for teaching as they prefer active student-oriented over traditional passive teacher-centered approach [4–6]. A paradigm shift from the teacher- to student-focused environment is especially present over the past decade [7,8], as more interactive and participative approaches to teaching, such as classroom discussions, case studies, student assignments, and oral presentations, are proven to be more effective [9,10]. Namely, they let students be active in the process and “discover the solution using the “Aha!” principle—that which is discovered for oneself is learned, understood, and remembered better than that which is told” [11] (p. 121,122), but as well to develop higher-level thinking skills and to prepare to become life-long learners [12].

However, individual differences impact how students think and learn [13]. Research indicates that various individual characteristics can affect how one responds to various stimuli during the learning process, such as cognitive abilities, learning experience, gender, national culture, creativity, or learning style [13–16]. Understanding the appropriateness of different teaching methods, depending on students' personal characteristics, can help create a learning environment that leads to optimal use of student abilities and successful learning. Although it is assumed that newer generations will prefer more active teaching methods, especially the methods that rely on technology, it is necessary to bear in mind that different personal characteristics, beyond age, such as creativity and learning style, can be a significant ingredient in defining ones' level of preference for different active or passive teaching methods. This paper investigates in more detail the effect of inborn creativity and learning styles on preferred teaching methods of Generation Y students—methods through which they prefer

to perceive, organize, and process information in the learning context. More creative individuals are assumed to favor more hands-on experiences which intrigue their imagination, and as far learning styles are concerned, we expect how active teaching methods will not be appropriate for all student audiences, as their appropriateness depends on students' style of learning. Additionally, the paper explores connection among creativity and learning style preferences, as well as the relationship between some Generation Y demographic characteristics and their "definition" of good teaching methods. We controlled for the effect of gender, grade point average (GPA), extra-curricular activities, and students' work experience, as those demographic characteristics could as well be the antecedents of students' teaching methods preferences.

This paper has five sections. After introduction, the following section presents theoretical background for this study, together with the development of hypotheses regarding relations between creativity and learning styles, and teaching methods preferences. The third section describes the cross-sectional empirical study conducted on a sample of 99 graduate management students, while the fourth section exhibits the findings related to the above-mentioned relationships. Finally, in the fifth section, theoretical implications and implications for university lecturers that strive to teach in a supportive way for the newest generation of students are forwarded.

## 2. Theoretical Framework and Hypotheses Development

### 2.1. Active Teaching Methods and Their Effectiveness

Prevailing methods of teaching over the previous decades have been a lecture-based format or other one-way information transfer processes, with teachers having an active and students a passive role in this process. These traditional teaching methods used, in spite of their simplicity and convenience, however, miss a practical view [17], and the acknowledgment of technological and social changes of the modern environment. In creation of a learning context that provides students with the basic knowledge but also the contextual application [8], the educational system has experienced a strong paradigm shift in teaching methods, emphasizing implementation of more modern active student-centered teaching methods as opposed to more traditional passive teacher-centered ones. Active teaching methods can be broadly defined as methods that strives to involve students in the learning process more directly. In that sense, they can refer to a host of methods that involve students' active participation in the learning process. The emphasis is on the combination of theoretical knowledge and practical experiences [18] and on the applicability of that knowledge [19]. The aim is to give students a central role in their process of learning and promote deep rather than surface learning [20]. Through this process, students develop their self-management skills and problem solving abilities, but as well, their creativity and autonomy [18].

Active teaching methods create a process where students are engaged in "doing things and thinking about what they are doing" [21] (p. 2). Accordingly, the teacher is no longer solely the translator of information, but the facilitator and organizer of the learning process [22].

Rivkin and Gim [12] emphasize how students learn more if their participation in education is not passive and when the learning process requires them to think more thoroughly about the subject, as well as to apply their knowledge in different settings. Numerous empirical research studies have analyzed different methods of teaching and their effectiveness, and provide evidence in support of active teaching methods as opposed to passive ones. Results show that active teaching methods can enhance quality of teaching, eventually leading to more effective learning [23–25]. Results also exhibit improvements in terms of cognitive outcomes in class-specific materials [26] and learning outcomes [27,28]. Students that participated in classes where active teaching methods were employed had significantly higher examination scores and better academic performance [20,29] as well as performed better in subsequent courses [30]. Furthermore, students showed the increase in their abilities to develop problems and solutions [31] and critical thinking abilities [32,33]. Active teaching methods can also help develop specific skills among students, for example design, communication and group skills [33], and leadership

abilities [34]. Higher levels of comprehension are also associated with the inclusion of more active teaching methods in classes [30,35], helping students to more easily apply theory into practice [36]. Beside this, students showed higher levels of class participation in classes where active teaching methods are used [37], together with higher engagement and satisfaction with classes [30,38]. Finally, empirical results show that students prefer more active teaching methods and consider them to be more effective [9].

## 2.2. Students' Demographic and Personality Characteristics and Preferred Teaching Methods

Students, as individuals, have their specific characteristics, needs, and motivation that can influence one's choice and preference for certain teaching methods. Numerous researchers acknowledged the impact of demographic and personality characteristics on students' evaluations and perceptions of learning [9,15,39,40].

The existing literature indicates that learning preferences differ according to gender. In one of the studies, Brainard and Ommen [41] found differences in learning preferences of men and women related to design, content, and form of instructions, as well as related to academic expectations. Significant gender differences in learning style preferences have also been found [42,43]. Keri [15] emphasizes that women prefer abstract and conceptual learning, while men show preference for more applied learning and practical examples. According to Choudhary et al. [42], the majority of men, as opposed to women, prefer multiple modes of information presentation. Males also indicate a preference for logical thinking and rational evaluation, while females seek relevance and personal connections with the material that is learned [44]. Still, several studies report no association between gender and teaching preferences [45,46], while some report minimal differences [9,47,48].

Generational membership is another individual characteristic that has been found to be an important factor influencing teaching preferences [29,49]. Parrish [1] emphasizes that Generation Y preferences, goals, values, and motivations are highly distinct from those of older generations. Students, members of Generation Y, favor more visual and kinesthetic than classical learning activities [4]. They are characterized as students that have preference towards using technology while learning, various experiential activities, teamwork, and learning that involves groups of students working together to find a solution [50,51].

Some researchers indicate student academic performance to influence their preferences for specific teaching methods. For instance, Fatima et al. [9] report that the above average GPA is present among students who perceive active teaching methods as the most effective ones. Still, similar research [45,52] did not confirm these relations.

Additional demographic elements, such as the employment status [45], student ethnic background [9], and national culture [16], are also considered to be antecedents of learning preferences.

Students' personality traits have also been found to be related to their preferences for different teaching methods [53–56]. Studies by Jessee et al. [39] and Zhang et al. [57] emphasize students' preferences could be predicted by their personality traits and self-rated abilities. A potentially relevant personality trait is as well a person's creativity, which is elaborated more in the subsequent text and empirically explored through the study presented in this paper.

## 2.3. Creativity and Preferred Teaching Methods

Creativity and ones' creative personality can be described as the one predisposed to generate and develop new ideas [58], characterizing individuals often thinking outside of the box, recombining, seeing, and seizing opportunities in their environment. Creative individuals are characterized by numerous cognitive and meta-cognitive strategies connected with the generation of new ideas, insight tasks, and divergent thinking [59]. Research on creative personality emphasizes how, among other, creative people show curiosity and openness to experience, have broad interests, are attracted to complexity and persistence, are independent in judgment, and seek autonomy [60,61].

Empirical results show that more creative individuals seek more challenging and complex teaching methods, and that certain learning styles are more associated with creative capabilities [62,63]. For instance, Alter [64] emphasizes that more creative students prefer independence and challenging tasks, while less creative students prefer more direct and specific assignments, structure, and support in the defined context. Kirton et al. [65] showed that individuals with the creativity level described as innovators have preferences for methods that have a less strict structure, and for more challenging aims and methods of assessment, as opposed to individuals with the creativity level described as adaptors.

Aforementioned findings imply active teaching methods to be preferred more by more creative individuals. Accordingly, we identified the following hypothesis:

**Hypothesis 1.** *Active teaching methods are preferred more by students exhibiting a higher level of creativity.*

#### 2.4. Learning Styles and Preferred Teaching Methods

During the learning process, students exhibit different styles by which they observe, sense, and interpret information. Personal preferences while learning are described as one's learning style, and different individual learning styles can be developed depending on one's abilities and preferences [66], but individual differences in learning styles can also be a consequence of demographic characteristics such as gender [43,67], culture [14,68], as well as learning requirements and the field of study [69,70].

The literature reveals numerous classifications of learning styles, ranging from classifications according to preferred sensory modalities (e.g., Fleming's Visual, Auditory, Read/Write and Kinesthetic (VARK) learning styles model) to those that indicate personal dimension that are believed to influence behavior in the learning process (e.g., Kolb's model of experiential learning or Honey and Mumford's learning style theory) [71]. The VARK model, for example, classifies learning styles based on the individual preference for a sensory modality used to assimilate new information, and distinguishes between individuals learning from perceiving visual elements such as images and graphics (visual style), listening and speaking (auditory style), reading and writing (visual/iconic style), or using tactile representation of information and body movement (kinesthetic style) [72]. Kolb's model of experiential learning classifies styles depending on the individual preference for concrete experience or abstract conceptualization when an individual perceives its environment, and preference for active experimentation or reflective observation when processing information [14,73]. Based on these two dimensions, four learning styles are identified: (1) an accommodator—learning through a concrete experience and active experimentation, (2) a diverger—learning through a concrete experience and reflective observation, (3) an assimilator—learning through an abstract conceptualization and reflective observation, and (4) a converger—learning through an abstract conceptualization and active experimentation [66]. Honey and Mumford's learning style theory presents an adapted version of Kolb's model, and classifies individual learning styles depending on their preference for learning from experience (an activist), reflective observation, description of processes and understanding of meaning (a reflector), observing and understanding facts and information and their relations as well as understanding of logic (a theorist), or doing and trying practical things (a pragmatist) [14,74].

Understanding learning styles and their role is an important element of effective teaching, both for students and teachers [75]. Literature suggests that the student motivation, their performance, and satisfaction enhance as teaching methods complement students' learning styles [8,67,76].

Researchers have recognized the necessity of designing teaching methods to match individual learning styles [77]. They also describe teaching methods most suitable for different learning types [78,79]. For instance, teaching methods that involve students' active participation, such as simulations and role plays, are suitable for activists, while more practically oriented methods, like workshops, demonstrations, and field trips, are suitable for pragmatists [78]. Audio/video films and readings are considered suitable for reflectors, while lectures, interactive discussions, and questions-and-answers sessions are considered suitable for theorists [78]. Olson [80] found the connection between learning styles and students' preferences for teaching, while Carrier et al. [81]

reported about the differences among learning style groups related to their preferences for group-oriented activities.

Theoretical underpinnings on characteristics related to various learning styles imply differing preferences for active and passive teaching methods depending on students' style of learning. Accordingly, grounded on the Honey and Mumford's learning style typology, we identify the following hypotheses:

**Hypothesis 2.** *Activists, reflectors, and pragmatists prefer active teaching methods.*

**Hypothesis 3.** *Theorists prefer passive teaching methods.*

### 3. Methodology

A cross-sectional quantitative study on a convenience sample was conducted to examine the relevance of creativity, and the role of learning style as a specific pattern of learning activities used during the learning process.

#### 3.1. Instruments

**Creativity.** Creativity was measured using Kirton's [82] single dimension of creativity assessed on a 5-item Likert's scale (1—strongly disagree, 5—strongly agree) ( $\alpha = 0.736$ ).

**Learning style.** In order to determine student's preferred manner of obtaining new information, which enables the typification of respondent's learning styles, Honey and Mumford's [83] 80-point extensive Learning Style Questionnaire (LSQ) was used. LSQ, which classifies learners into four major groups—activists, reflectors, theorists, and pragmatists, was used as it is considered to be more suitable inventory for a business community [84], and as it is extensively employed in management training [14] and scientific research in the field [67,74]. Cronbach's alphas exhibited the reliability of both the whole instrument ( $\alpha = 0.658$ ) and individual learning style scales ( $\alpha$  activist = 0.725;  $\alpha$  reflector = 0.655;  $\alpha$  theorist = 0.659;  $\alpha$  pragmatist = 0.562).

**Teaching methods preferences.** The preferences for various teaching methods (TM) were assessed using a 52-item questionnaire based on the relevant literature on teaching and teaching methods, accompanied with authors' abundant teaching experience. Students assessed the extent to which a certain teaching method (38 active and 14 passive) contributes to acquiring new knowledge/skills, using a Likert-type scale from 1 (does not contribute at all) to 4 (contributes extremely). In order to ensure validity, items were first examined by a group of teachers and researchers from the Faculty of Economics and Business in Zagreb (FEB-Zagreb) and secondly, piloted on a small student sample. This resulted in minor adjustments of the questionnaire items.

**Demographic characteristics.** Eight respondents' demographic characteristics were collected in order to be used as control variables—gender, GPA on both undergraduate and graduate level (to date), student association membership, participation in student competition and student exchange, general work experience, relevant work experience (specific work experience in the field of studies), and volunteering experience.

#### 3.2. Sample and Data Collection

The sample consists of 99 students, pertaining to the 78.6% of the total population of graduate management students at the FEB-Zagreb. The majority of respondents were female (64.6%), were not members of a student association (81.8%), did not participate in a student competition (72.7%), did not experience a student exchange program (87.9%), have general work experience (90.9%), have specific work experience in the field of their studies (60.0%), and did not volunteer (51.5%). Respondents' average GPA at the undergraduate level is 3.39, and at the graduate level, 4.32. All of the students that participated in our study were born in the beginning or mid 1990s, thus considered as Generation Y students.

Data were collected during seminar lectures of a human resource management course, as the survey was closely related to the topic scheduled by the class syllabus. Students were informed about the survey and main research goals in advance. Their participation was voluntary and they could refuse to participate. Although it was not feasible to assure anonymity because in-class presence was tracked, the confidentiality was assured.

### 3.3. Data Analysis

Apart from standard descriptive and inferential statistics calculations (Pearson correlation coefficients, Mann–Whitney U values, and Kruskal–Wallis H values depending on the nature of variables according to Bryman and Cramer [85], which effect sizes ( $r^2$  for Pearson correlations,  $\epsilon^2$  for Kruskal–Wallis H values, and  $\eta^2$  for Mann–Whitney U values) were argued according to Ferguson [86]), some extra data analyses were conducted. First, using Honey and Mumford's [83] 5-level scheme for assessing the learning style preference (see Supplement Materials, Table S1), respondents' results were classified into five groups: (1) no strong preference for any learning style, (2) unimodal learner (one learning style strongly preferred), (3) bimodal learner (two learning styles strongly preferred), (4) multimodal learner with three strongly preferred learning styles, and (5) multimodal learner with four strongly preferred learning styles. Second, we grouped teaching methods with matching preferences, using the Principal Axis Factoring (PAF) method with varimax rotation and Kaiser normalization. The factor analysis resulted in 16 factors—TM bundles (F1 to F16), with Eigen values of at least 1, covering all 52 teaching methods explored (the factor loading was set at the standard level of higher than 0.3 cut value), and explaining 74.70% of the total variance. The rotation converged in 22 iterations, with Barlett's test of sphericity being significant ( $p < 0.001$ ) and the Kaiser–Meyer–Olkin measure of sampling adequacy being greater than 0.6 (KMO = 0.655), indicating that PAF was appropriate for the data [87]. We used the IBM SPSS Statistics 21.0 for data analysis.

## 4. Research Results

Respondents' average creativity level was 3.85 (SD = 0.57; min = 2.40; max = 5.00). Additionally, 83.3% of respondents exhibited one dominant learning style, while for the rest, two equally dominant styles were revealed. In addition, 45.7% of respondents with one dominant style are reflectors, 27.2% are theorists, 15.7% are activists, and 11.4% are pragmatists while learning. When considering learning style preferences, 4.8% do not exhibit strong or very strong preference for any of the learning styles, 25.0% are unimodal learners, 30.9% are bimodal learners, 28.6% have a strong or very strong preference for three, and 10.7% for four learning styles.

To our surprise, as presented in Table 1 (see the total list of specific individual TM per preference level and corresponding mean values in Supplement Materials, Table S2), respondents exhibited a very strong preferences for 5 passive (“lecturing using business examples experienced by teacher him/herself”, “lecturing using examples from organizational/managerial practice”, “lecturing using teaching aids (e.g., PPT presentations, short videos, internet)”, “teacher feedback about student work (projects, seminar papers, undergraduate/graduate thesis, etc.)” and “teacher feedback about student work during seminars”), and only 2 active individual TM (“internship” and “interactive lectures that involve students in discussion”). At the same time, they exhibited the extremely small preferences for only 2 passive TM (“lecturing without teaching aids (e.g., PPT presentations, videos, internet)” and “lecturing without involving students in discussion”).

Respondents' preferences of TM bundles presented in Table 2 are even more surprising. Among the top six TM bundles, five are related to passive teaching methods, with the exception of “internship and outside lectures/seminars” bundle which is ranked 4 and is a mix of active and passive methods. Corresponding to the individual TM results, the least preferred TM bundle is a passive teaching bundle “lecturing without teaching aids or involving students”.

**Table 1.** Levels of respondents' preferences for active and passive teaching methods.

The Preference Level	Active Teaching Methods		Passive Teaching Methods	
	n	%	n	%
Very strong preferences (3.50–4.00)	2	5.3	5	35.7
Strong preferences (3.00–3.50)	20	52.6	5	35.7
Moderate preferences (2.50–3.00)	13	34.2	2	14.3
Small preferences (2.00–2.50)	3	7.9	-	-
Extremely small preferences (1.00–2.00)	-	-	2	14.3
Total	38	100	14	100

**Table 2.** Active and passive teaching method bundles preferences ranking, mean values, and significant relationship with creative personality and learning style scores.

TM Bundles	Rank	M (SD)	Significant Correlations
<b>Active teaching</b>			
Internship and outside lectures/seminars (F10)	4	3.41 (0.61)	Creative personality (r = 0.327**) Pragmatist score (r = 0.234*)
Interactive lectures/seminars and learning through exercises, case studies, etc. (F3)	7	3.15 (0.47)	Creative personality (r = 0.219*) Theorist score (r = 0.345**) Pragmatist score (r = 0.256*)
Peer assessment and learning (F12)	8	3.08 (0.70)	-
Individual work on projects, seminar papers, etc., and working on real-life business projects/problems (F6)	9	3.03 (0.58)	Reflector score (r = 0.314**)
Group work outside the classroom and during seminars, and writing "empirical" undergraduate/graduate thesis (F1)	10	2.98 (0.55)	Reflector score (r = 0.240*)
Writing a "theoretical" undergraduate/graduate thesis and calculation assignments during seminars (F8)	11	2.98 (0.67)	Reflector score (r = 0.225*)
Reading outside the classroom and individual learning (F4)	12	2.95 (0.65)	Creative personality (r = 0.226*) Reflector score (r = 0.280**)
Alternative teaching methods (role playing, mental mapping, recording media content) (F11)	13	2.82 (0.57)	Activist score (r = 0.269*)
Using ICT while acquiring knowledge/skills and working on teachers' scientific research projects (F2)	14	2.78 (0.52)	-
Student presentations during lectures and seminars (F7)	15	2.74 (0.65)	-
<b>Passive teaching</b>			
Lecturing using examples from business (F14)	1	3.87 (0.32)	-
Lecturing using teaching aids (F16)	2	3.60 (0.53)	-
Teacher feedback (F9)	3	3.54 (0.52)	Theorist score (r = 0.277*)
Teaching outside the classroom (F15)	5	3.36 (0.73)	-
Guest lecturing and watching education videos in the classroom (F5)	6	3.27 (0.57)	Reflector score (r = 0.358**)
Lecturing without teaching aids or involving students (F13)	16	1.79 (0.69)	-

Notes. \*  $p < 0.05$ . \*\*  $p < 0.01$ .

Table 2 exhibits as well the relevance of creativity and four Honey and Mumford learning styles scores for respondents' preferences of ten active and six passive TM bundles, explored through Pearson correlation coefficient calculations. As expected, respondents' creativity was found to be related to students' preferences of active teaching. Precisely, creativity was found to be statistically significantly related to three active TM bundles ( $0.05 < r^2 < 0.11 \rightarrow$  small effect size), and none of the passive TM bundles. Another expected finding is the finding that activist, pragmatist, and reflector scores are as well related to students' preferences for active teaching. The activist score was found to be statistically significantly related to one ( $r^2 = 0.07 \rightarrow$  small effect size) and the pragmatist score to two active TM bundles ( $r^2 = 0.07 \rightarrow$  small effect size). In the same time, activism or pragmatism while learning were not found to be statistically significantly related to any of the passive TM bundles. The reflector score was found to be statistically significantly related in more cases (four cases) to active than to passive TM bundles (only one case) ( $0.05 < r^2 < 0.10 \rightarrow$  small effect size). Finally, the finding that the theorist score is not related to a greater extent to passive TM bundles is somewhat surprising. It was found to be statistically significantly related to one active and one passive TM bundle.

Furthermore, by using Kruskal–Wallis H tests for independent samples, we explored whether the dominant learning style or the modality of learning styles correspond with respondents' TM bundles

preferences. It was revealed that only the preference for “individual work on projects, seminar papers, etc., and working on real-life business projects/problems” bundle (F6) is different depending on the respondents’ dominant learning style ( $\epsilon^2 = 0.18 \rightarrow$  small effect size). This active TM bundle is preferred more by reflectors ( $M = 3.25$ ) and theorists ( $M = 3.09$ ), and less preferred by activists ( $M = 2.80$ ) and pragmatists ( $M = 2.47$ ). Furthermore, preferences for only one semi-active TM bundle (“internship and outside lectures/seminars” – F10) and one passive TM bundle (“guest lecturing and watching education videos in the classroom” – F5) differed depending on the modality of respondents’ learning styles ( $\epsilon^2 = 0.13$  and  $0.14 \rightarrow$  small effect size). Respondents with no strong preference for any learning style exhibit the lowest preference ( $M < 2.8$ ), and multimodal learners the highest preference ( $M > 3.4$  for both types of multimodal learners) for those TM bundles.

Additionally, we explored the relationship between inborn creativity and learning style preferences. As visible from Table 3, respondents with higher scores on creativity exhibited a statistically significant higher preference for pragmatic learning ( $r^2 = 0.05 \rightarrow$  small effect size).

**Table 3.** The correlation between inborn creativity and learning style preferences

		Activist Score	Reflector Score	Theorist Score	Pragmatist Score
Creative personality	Pearson correlation	0.092	−0.146	0.155	0.231 *
	Sig. (2-tailed)	0.407	0.184	0.164	0.037

Notes. \*  $p < 0.05$ .

Finally, we explored the relevance of students’ demographic characteristics for their preferences for various teaching methods. Table 4 exhibits for which active and passive TM bundles preferences are gender, undergraduate GPA, student association membership, exchange experience, and relevant work and volunteering experience relevant, while no association was found for the remaining three explored demographic variables—graduate GPA, student competition experience, and general work experience. Female students ( $0.05 < \eta^2 < 0.07 \rightarrow$  small effect size), students with higher GPA at the undergraduate level ( $r^2 = 0.07 \rightarrow$  small effect size), student association members ( $\eta^2 = 0.04 \rightarrow$  small effect size), students that have been on an exchange program ( $0.05 < \eta^2 < 0.06 \rightarrow$  small effect size), students with relevant work experience ( $0.05 < \eta^2 < 0.07 \rightarrow$  small effect size), and students who volunteered ( $\eta^2 = 0.06 \rightarrow$  small effect size), assessed displayed TM bundles statistically significantly more favorably.

**Table 4.** Demographic factors statistically significantly related to TM bundles preferences

TM Bundles	Significant Demographic Factors
<b>Active TM bundles</b>	
Interactive lectures/seminars and learning through exercises, case studies, etc. (F3)	Student association membership Relevant work experience
Internship, and outside lectures/seminars (F10)	Exchange experience Volunteering experience
Alternative teaching methods (role playing, mental mapping, recording media content) (F11)	Gender
<b>Passive TM bundles</b>	
Teacher feedback (F9)	Gender
Lecturing using examples from business (F14)	Exchange experience Gender
Teaching outside the classroom (F15)	Undergraduate GPA Exchange experience Relevant work experience

Notes. \*  $p < 0.05$ .



## 5. Discussion and Conclusions

### 5.1. Hypotheses Testing, Theoretical Implications, and Implications for University Lecturers

Although it is widely accepted that the focus of contemporary lecturers' instructional techniques should move from being "production-oriented" to more "customer-oriented" [71], not all learners strive to be autonomous learners. Our findings imply that more creative students, as well as activists and pragmatists, and especially reflectors while learning, do exhibit the greater inclination towards active teaching methods. In the same time, our finding leaves room for a more passive teaching methodology while providing tuition to those less creative and students with a theoretical learning mind. These findings provide support for our hypotheses, implying that active methods of teaching are appropriate for certain Generation Y students, and could not be efficiently or effectively applied to all Generation Y members. Moreover, respondents find traditional lecturing and teacher feedback more helpful than active-learning methods, which corresponds with Rivkin and Gim's [12] finding and their conclusion that students feel most prepared for the examination following the traditional lecture method and are concerned about the increased work-load associated with active-learning activities, especially those involving out-of-class learning time.

Precisely, because of their specific personal and cognitive characteristics, creative individuals were found to look for more challenging teaching methods that enable broader knowledge conceptualizations accompanied by practical implications, which at the same time, provide them with opportunities to boost their creativity. Thus, as Chan [88] states, when working with more creative individuals, educators are challenged to be creative when deciding on their teaching, and to use teaching methods that allow their students to use the full potential of their creativity.

Learning style theories propose that if the teaching methodology is in accordance with the learning style of a student, then his/her learning will be enriched [76,84,89]. In other words, while designing teaching and learning activities, teachers have to take into account the preferred learning style [74,90], as this improves both student attitudes toward learning and their academic achievements [67,91]. However, not all students have the same learning style, as confirmed by our findings exhibiting that the majority of graduate management students in class 2017–2018 at FEB-Zagreb are reflectors, although other dominant learning styles as well as more-modal learners are also present. It is therefore recommended to educators to use various strategies when they teach, in order to provide a learning context that will be the most beneficial one for diverse types of learners [8,13,67,71,92]. This is in line with our findings that active teaching methods are not favored by all Generation Y subgroups, which implies that educators have to tailor their instruction modes to match various learning styles, in other words, please both more active and more passive learners. Methods chosen by instructors should not be, as Golen et al. [93] (p. 45) emphasize, "a function of each instructor's own experiences as a student, personal preferences, unfamiliarity with other methods, departmental expectations, or peer/mentor influence", which is usually the case. They should be a function of students' different approaches to learning, which enables all students to learn as effectively as others, but as well, a result of understanding that different subjects, knowledge, and skills taught, and in different context in which they are taught, may be learned more effectively when presented in an adjusted form [84,94]. For example, related to different teaching settings, when the program requires delivery of material to a large group of students, implementation of active-learning strategies is challenging logistically [12].

Even more, because of the aforementioned, academics recommend that educators encourage students to develop and use various learning styles appropriately, in other words to adjust their learning style to the situation, as this enables them to approach learning situations with flexibility [14,67,73]. We agree with Bhagat et al. [72] (p. S59) that the best learning style is "to avoid depending upon any single style", as well as with De Vita [14] (p. 172), who says that "the ability to select from a personal style portfolio according to the specific challenges of a situation is particularly valued in the real world of business where versatility and flexibility are considered critical personal attributes to respond effectively to the constantly changing demands internal and external to the organization".

Finally, we obtained answers on our questions related to the most preferred learning style of creative personas, and to demographic characteristics that intrigue specific TM preferences. The most creative individuals were identified with pragmatists, which is aligned with Honey and Mumford's [83] view of pragmatists as individuals who positively search out for novel solutions and ideas, try them out, and check for their practical application. Five demographic factors were identified as significant for respondents' preferences of active TM bundles (gender, student association membership, exchange experience, relevant work experience, and volunteering experience), and four for their preferences of passive TM bundles (gender, undergraduate GPA, student exchange experience, and relevant work experience). Female students, and those with higher undergraduate GPA, extra-curricular activities, and relevant work experience, perceive respective active and passive TM practices more favorably.

Familiarity with students' learning styles and teaching preferences has not been completely utilized for improvements in teaching [95]. University lectures as well as developers of study programs, need to be aware that differences exist, and that various factors have their influence in determining one's preference towards different methods and success of learning. Understanding student's unique preferences can equip teachers to plan and design effective learning programs, instructional materials and tools, and teaching environment.

### 5.2. Limitations and Future Research

The first limitation of this study is the usage of one graduate study program from a single institution, which limits the generalization of results. Potential future studies should survey students from other study programs at the FEB-Zagreb, as well as students from other scientific disciplines besides business and economics. In addition, for some future studies, it would be interesting to incorporate students from different cultures and cultural background, as the research had shown national cultures can affect student preferences for different teaching methods [16].

Second, field researches are always limited with the research instruments used. Self-reported inventories are considered to lack the reliability, and potentially saturated with socially desirable responding [94]. However, there is a great deal of literature evidencing the validity and reliability of Kirton's creativity scale, and the teaching methods list used is one of the most comprehensive ones in scientific research related to teaching methods preferences. Still, doubts could be raised related to the usage of LSQ. Although the LSQ is considered to be more adequate for the business environment, the question of its applicability to the student population has been raised [14]. Alternatives that could be considered in future research are for example, Dunn and Dunn's Visual, Auditory, Kinesthetic and Tactile (VAKT) learning styles inventory, Felder's and Soloman's Index of Learning Styles (ILS), or Jester's Learning Style Survey (LSS), Kolb's 12-item self-reported Learning Styles Inventory [14,67,73,86,88]. Furthermore, the mere number of learning styles identified by learning style inventories is problematic [94], which likewise applies to the four-factor structure of LSQ. Not only that majority of people usually are not uniformly fitted into one of the learning styles identified by popular inventories [84], but the majority exhibit a mix of several preferred learning styles and use them interchangeably depending on the situation [94].

Finally, low effect sizes, together with low correlations coefficients, demand for the replication of the study in order to report the existence of the effects.

**Supplementary Materials:** The following are available online at <http://www.mdpi.com/2227-7102/10/4/87/s1>, Table S1: The Honey & Mumford's learning style preference scheme, Table S2: The preference level of various individual active and passive teaching methods.

**Author Contributions:** Conceptualization N.P.V. and A.A.; methodology N.P.V. and A.A.; writing—original draft preparation N.P.V. and A.A.; formal analysis N.P.V.; writing—review and editing N.P.V. and A.A.; project administration A.A. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. Arora, N.; Dhole, V. Generation Y. *Benchmark. Int. J.* **2019**, *26*, 1378–1404. [[CrossRef](#)]
2. Parrish, D.R. Principles and a model for advancing future-oriented and student focused teaching and learning. *Procedia Soc. Behav. Sci.* **2016**, *228*, 311–315. [[CrossRef](#)]
3. Oblinger, D. Boomers, Gen-Xers, and Millennials: Understanding the new students. *Educ. Cause Rev.* **2003**, *38*, 37–47.
4. Reilly, P. Understanding and teaching generation Y. *Engl. Teach. Forum* **2012**, *50*, 2–11.
5. Fesol, S.F.A.; Salam, S.; Osman, M.; Bakar, N.; Salim, F. Learning style approaches for Gen Y: An assessment conducted in a Malaysian Technical University. *Pertanika J. Soc. Sci. Hum.* **2016**, *24*, 1335–1347.
6. Yektyastuti, R.; Mawardini, A.; Hartono, R.Y. Preparing the next generation science teacher: A case in applied science course. *J. Phys. Conf. Ser.* **2019**, *1233*, 1–4. [[CrossRef](#)]
7. Benkovic, S.; Dobrota, M. Application of teaching methods and techniques at Serbian Universities: Progress over time. *Management* **2012**, *17*, 35–44. [[CrossRef](#)]
8. Mahmood, A.; Khatoon, F.; Ali, M.; Ejaz, S.; Qureshi, M.A. Perceptions and preference of contemporary teaching methods among university students of Pakistan—A cross-sectional survey. *Q. Med. Chan.* **2013**, *19*, 13–16. [[CrossRef](#)]
9. Fatima, A.H.; Ahmad, N.N.N.; Nor, M.; Megat, P.N.S. Accounting students' perceptions of effective teaching methods and instructor characteristics: Some Malaysian evidence. *Malay. Account. Rev.* **2007**, *6*, 101–128.
10. Scott, T.; Gray, A.; Yates, P. A controlled comparison of teaching methods in first-year university physics. *J. R. Soc. N. Z.* **2013**, *43*, 88–99. [[CrossRef](#)]
11. Locke, I.; Ebron, A. The SPHINX teaching method and its application to a business finance course. *Financ. Pract. Educ.* **1998**, *8*, 120–126.
12. Rivkin, A.; Gim, S. Student preferences rewarding teaching methods in a drug-induced diseases and clinical toxicology course. *Am. J. Pharm. Educ.* **2013**, *77*, 1–7. [[CrossRef](#)] [[PubMed](#)]
13. Hill, F.; Tomkinson, B.; Hiley, A.; Dobson, H. Learning style preferences: An examination of differences amongst students with different disciplinary backgrounds. *Innov. Educ. Teach. Int.* **2016**, *53*, 122–134. [[CrossRef](#)]
14. De Vita, G. Learning styles, culture and inclusive instruction in the multicultural classroom: A business and management perspective. *Innov. Educ. Teach. Int.* **2001**, *38*, 165–174. [[CrossRef](#)]
15. Keri, G. Male and female college students learning styles differ: An opportunity for instructional diversification. *Coll. Stud. J.* **2002**, *36*, 433–442.
16. Rodrigues, C.A. Culture as a determinant of the important level business structure on ten teaching/learning techniques: A survey of university students. *J. Manag. Dev.* **2005**, *24*, 608–621. [[CrossRef](#)]
17. Škudienė, V. Case method education. In *The Case Study Method in Business Education*; Ammerman, P., Gaweł, A., Pietrzykowski, M., Rautkienė, R., Williamson, T., Eds.; Bogucki Wydawnictwo Naukowe: Poznań, Poland, 2012; pp. 9–24.
18. Kokavcova, D. The modern methods of management education. In *Proceedings of the 1st Annual International Interdisciplinary Conference—AIIC 2013, Azores, Portugal, 24–26 April 2013*; European Scientific Institute Publishing: Kocani, North Macedonia, 2013; pp. 302–308.
19. Pietrzykowski, M.; Szczyt, M. Applying the case study method in Lithuanian and Polish higher education. In *The Case Study Method in Business Education*; Ammerman, P., Gaweł, A., Pietrzykowski, M., Rautkienė, R., Williamson, T., Eds.; Bogucki Wydawnictwo Naukowe: Poznań, Poland, 2012; pp. 39–54.
20. Dowling, C.; Godfrey, J.M.; Gyles, N. Do hybrid flexible delivery teaching methods improve accounting students' learning outcomes? *Account. Educ.* **2003**, *12*, 373–391. [[CrossRef](#)]
21. Bonwell, C.C.; Eison, J.A. *Active Learning: Creating Excitement in the Classroom*, 1991 ASHE-ERIC Higher Education Reports; The George Washington University, School of Education and Human Development: Washington, DC, USA, 1991.
22. Yakovleva, N.O.; Yakovlev, E.V. Interactive teaching methods in contemporary higher education. *Pac. Sci. Rev.* **2014**, *16*, 75–80. [[CrossRef](#)]
23. Pedró, F. Comparing traditional and ICT-enriched university teaching methods: Evidence from two empirical studies. *High. Educ. Eur.* **2005**, *30*, 399–411. [[CrossRef](#)]

24. Safapour, E.; Kermanshachi, S.; Taneja, P.A. Review of nontraditional teaching methods: Flipped classroom, gamification, case study, self-learning, and social media. *Educ. Sci.* **2019**, *9*, 273. [[CrossRef](#)]
25. Safari, M.; Yazdanpanah, B.; Ghafarian, H.R.; Yazdanpanah, S. Comparing the effect of lecture and discussion methods on students learning and satisfaction. *Iran. J. Med. Educ.* **2006**, *6*, 59–64.
26. Michel, N.; Cater, J.J.; Varela, O. Active versus passive teaching styles: An empirical study of student learning outcomes. *Hum. Resour. Dev. Q.* **2009**, *20*, 397–418. [[CrossRef](#)]
27. Carpenter, J.M. Effective teaching methods for large classes. *J. Fam. Consum. Sci. Res.* **2006**, *24*, 13–23.
28. Hunt, D.; Haidet, P.; Coverdale, J.; Richards, B. The effect of using team learning in an evidence-based medicine course for medical students. *Teach. Learn. Med.* **2003**, *15*, 131–139. [[CrossRef](#)] [[PubMed](#)]
29. Delahoyde, T. Generational Differences of Baccalaureate Nursing Students' Preferred Teaching Methods and Faculty Use of Teaching Methods. Ph.D. Thesis, College of Saint Mary, Omaha, NE, USA, 2009.
30. Kellar, G.M.; Jennings, B.E.; Sink, H.L.; Mundy, R.A. Teaching transportation with an interactive method. *J. Bus. Logist.* **1995**, *16*, 251–279.
31. Miller, J.S. Problem-based learning in organizational behavior class: Solving students' real problems. *J. Manag. Educ.* **2004**, *28*, 578–590. [[CrossRef](#)]
32. Lee, J.; Lee, Y.; Gong, S.; Bae, J.; Choi, M. A meta-analysis of the effects of non-traditional teaching methods on the critical thinking abilities of nursing students. *BMC Med. Educ.* **2016**, *16*, 240–249. [[CrossRef](#)]
33. Terenzini, P.T.; Cabrera, A.F.; Colbeck, C.L.; Parente, J.M.; Bjorklund, S.A. Collaborative learning vs. lecture/discussion: Students' reported learning gains. *J. Eng. Educ.* **2001**, *90*, 123–130. [[CrossRef](#)]
34. Perkins, D.; Saris, N. A jigsaw classroom technique for undergraduate statistics courses. *Teach. Psychol.* **2001**, *28*, 111–113. [[CrossRef](#)]
35. Leo, C. Flipped Classroom Pedagogical Model and Middle-Level Mathematics Achievement: An Action Research Study. Ph.D. Thesis, College of Education, University of South Carolina, Columbia, SC, USA, 2017.
36. Pfahl, D.; Laitenberger, O.; Ruhe, G.; Dorsch, J.; Krivobokova, T. Evaluating the learning effectiveness of using simulations in software project management education: Results from a twice replicated experiment. *Inf. Softw. Technol.* **2004**, *46*, 127–147. [[CrossRef](#)]
37. Benek-Rivera, J.; Mathews, V.E. Active learning with Jeopardy: Students ask the questions. *J. Manag. Educ.* **2004**, *28*, 104–118. [[CrossRef](#)]
38. Laditka, S.B.; Houck, M.M. Student-developed case studies: An experiential approach for teaching ethics in management. *J. Bus. Ethics* **2006**, *64*, 157–167. [[CrossRef](#)]
39. Jessee, S.A.; O'Neill, P.N.; Dosch, R.O. Matching student personality types and learning preferences to teaching methodologies. *J. Dent. Educ.* **2006**, *70*, 644–651. [[PubMed](#)]
40. Severiens, S.; Dam, G.T. A multilevel meta-analysis of gender differences in learning orientations. *Br. J. Educ. Psychol.* **1998**, *68*, 595–608. [[CrossRef](#)]
41. Brainard, S.R.; Omen, J.L. Men, women, and learning styles. *Commun. Coll. Front.* **1977**, *5*, 32–36.
42. Choudhary, R.; Dullo, P.; Tandon, R.V. Gender differences in learning style preferences of first year medical students. *Pak. J. Physiol.* **2011**, *7*, 42–45.
43. Wehrwein, E.A.; Lujan, H.L.; DiCarlo, S.E. Gender differences in learning style preferences among undergraduate physiology students. *Adv. Physiol. Educ.* **2007**, *31*, 153–157. [[CrossRef](#)]
44. Lie, L.Y.; Angelique, L.; Cheong, E. How do male and female students approach learning at NUS? *CDTL Brief.* **2004**, *7*, 1–3.
45. Alharbi, H.A.; Almutairi, A.F.; Alhelih, E.M.; Alshehry, A.S. The learning preferences among nursing students in the King Saud University in Saudi Arabia: A cross-sectional survey. *Nurs. Res. Pract.* **2017**, *2017*. [[CrossRef](#)]
46. Murphy, R.J.; Gray, S.A.; Straja, S.R.; Bogert, M.C. Student learning preferences and teaching implications. *J. Dent. Educ.* **2004**, *68*, 859–866.
47. Sun, T.-D. Learning Styles and Preferences for Teaching Methods among Non-traditional College Students. Ph.D. Thesis, Faculty of the graduate school of Texas, Texas A&M University, College Station, TX, USA, 1997.
48. Weber, K.; Custer, R. Gender-based preferences toward technology education content, activities, and instructional methods. *J. Technol. Educ.* **2005**, *16*, 55–71. [[CrossRef](#)]
49. Hampton, D.; Pearce, P.F.; Moser, D.K. Preferred methods of learning for nursing students in an on-line degree program. *J. Prof. Nurs.* **2017**, *33*, 27–37. [[CrossRef](#)] [[PubMed](#)]

50. Kvavik, R.B. Convenience, communications, and control: How students use technology. In *Educating the Net Generation*; Oblinger, D.G., Oblinger, J.L., Eds.; EDUCAUSE: Washington, DC, USA, 2005; chapter 7; pp. 1–20.
51. Minifie, J.R.; Middlebrook, B.; Otto, V. Generational specific teaching methods applied to entrepreneurial students. *Bus. Renaiss. Q.* **2011**, *6*, 77–94.
52. Baykan, Z.; Naçar, M. Learning styles of first-year medical students attending Erciyes University in Kayseri, Turkey. *Adv. Physiol. Educ.* **2007**, *31*, 158–160. [[CrossRef](#)] [[PubMed](#)]
53. Chamorro-Premuzic, T.; Furnham, A.; Christopher, A.N.; Gawood, J.; Martin, N. Birds of a feather: Students' preferences for lecturers' personalities as predicted by their own personality and learning approaches. *Pers. Individ. Differ.* **2008**, *44*, 965–976. [[CrossRef](#)]
54. Felder, R.M.; Felder, G.N.; Dietz, E.J. The effects of personality type on engineering student performance and attitudes. *J. Eng. Educ.* **2002**, *91*, 3–17. [[CrossRef](#)]
55. Fjelkner, A.; Hakansson, A.; Rosander, P. Do personality traits matter? A comparative study of student preferences for teaching and learning activities and assessment modes in two different majors. *Teach. Learn. Inq.* **2019**, *7*, 78–102. [[CrossRef](#)]
56. Zhang, L. Are thinking styles and personality types related? *Educ. Psychol.* **2000**, *20*, 271–283. [[CrossRef](#)]
57. Zhang, L.; Huang, J.; Zhang, L. Preferences in teaching styles among Hong Kong and US university students. *Pers. Individ. Differ.* **2005**, *39*, 1319–1331. [[CrossRef](#)]
58. Helson, R. In search of the creative personality. *Creat. Res. J.* **1996**, *9*, 295–306. [[CrossRef](#)]
59. De Caroli, M.E.; Sagone, E. Creative thinking and Big five factors of personality measured in Italian schoolchildren. *Psychol. Rep.* **2009**, *105*, 791–803. [[CrossRef](#)] [[PubMed](#)]
60. Barron, F.; Harrington, D.M. Creativity, intelligence, and personality. *Ann. Rev. Psychol.* **1981**, *32*, 439–476. [[CrossRef](#)]
61. Selby, E.C.; Shaw, E.J.; Houtz, J.C. The creative personality. *Gift. Child Q.* **2005**, *49*, 300–314. [[CrossRef](#)]
62. Eishani, K.A.; Saa'd, E.A.; Nami, Y. Relationship between learning styles and creativity. *Procedia Soc. Behav. Sci.* **2014**, *114*, 52–55. [[CrossRef](#)]
63. Friedel, C.R.; Rudd, R.D. Creative thinking and learning styles in undergraduate agriculture students. *J. Agric. Educ.* **2006**, *47*, 102–111. [[CrossRef](#)]
64. Alter, C.E. Creativity styles and personality characteristics. *Dissert. Abstr. Int. Sect. B Sci. Eng.* **2001**, *62*, 590.
65. Kirton, M.; Bailey, A.; Glendinning, W. Adaptors and innovators: Preference for educational procedures. *J. Psychol.* **1991**, *125*, 445–455. [[CrossRef](#)]
66. Chen, C.J.; Toh, S.C.; Ismail, W.M.F.W. Are learning styles relevant to virtual reality? *J. Res. Tech. Educ.* **2005**, *28*, 123–141. [[CrossRef](#)]
67. Shenwai, M.R.; Patil, K.B. Assessment of learning style preferences and their influence on gender & academic performance among first year medical undergraduate students. *Natl. J. Integr. Res. Med.* **2017**, *8*, 109–115.
68. Hayes, J.; Allinson, C.W. Cultural differences in the learning styles of managers. *Manag. Int. Rev.* **1988**, *28*, 75–80.
69. Matthews, D.B. An investigation of students' learning styles in various disciplines in colleges and universities. *J. Humanist. Couns.* **1994**, *33*, 65–74. [[CrossRef](#)]
70. Sajedi, R. The study of relationship between learning styles and level of creativity among students in Semnan University of Medical Sciences. *Int. J. Sci. Manag. Devel.* **2014**, *2*, 646–651.
71. Jaju, A.; Kwak, H.; Zinkhan, G.M. Learning styles of undergraduate business students: A cross-cultural comparison between the US, India, and Korea. *Mark. Educ. Rev.* **2002**, *12*, 49–60. [[CrossRef](#)]
72. Bhagat, A.; Vyas, R.; Singh, T. Students awareness of learning styles and their perceptions to a mixed method approach for learning. *Int. J. Appl. Basic. Med. Res.* **2015**, *5*, 58. [[CrossRef](#)]
73. Loo, R. A meta-analytic examination of Kolb's learning style preferences among business majors. *J. Educ. Bus.* **2002**, *77*, 252–256. [[CrossRef](#)]
74. Nizami, R.; Latif, M.Z.; Wajid, G. Preferred learning styles of medical and physiotherapy students. *Ann. King Edw. Med. Univ.* **2017**, *23*, 73–76. [[CrossRef](#)]
75. Yousef, D.A. Learning style preferences of undergraduate students. *Educ. Train.* **2018**, *60*, 971–991. [[CrossRef](#)]
76. Van Auken, S.; Chrysler, E. The relative value of skills, knowledge, and teaching methods in explaining Master of business administration (MBA) program return on investment. *J. Educ. Bus.* **2005**, *81*, 41–45. [[CrossRef](#)]
77. Valley, K. Learning styles and courseware design. *Res. Learn. Technol.* **1997**, *5*, 42–51. [[CrossRef](#)]

78. Bhalli, M.A.; Khan, I.A.; Sattar, A. Learning style of medical students and its correlation with preferred teaching methodologies and academic achievement. *J. Ayub Med. Coll. Abbottabad* **2015**, *27*, 837–842.
79. Svinicki, M.D.; Dixon, N.M. The Kolb model modified for classroom activities. *Coll. Teach.* **1987**, *35*, 141–146. [[CrossRef](#)]
80. Olson, V.G. Physical Therapy Student Learning Styles and Their Preference for Teaching Methods and Instructional Activities. Ph.D. Thesis, Seton Hall University, South Orange, NJ, USA, 2000.
81. Carrier, C.A.; Newell, K.J.; Lange, A.L. Relationship of learning styles to preferences for instructional activities. *J. Dent. Educ.* **1982**, *46*, 652–656. [[PubMed](#)]
82. Kirton, M. Adaptors and innovators: A description and measure. *J. Appl. Psychol.* **1976**, *61*, 622–629. [[CrossRef](#)]
83. Honey, P.; Mumford, A. *The Manual of Learning Styles*; Peter Honey Publications: Maidenhead, UK, 1992.
84. Chew, K.S. Tailoring teaching instructions according to student's different learning styles: Are we hitting the right button? *Educ. Med. J.* **2016**, *8*, 103–107. [[CrossRef](#)]
85. Bryman, A.; Cramer, D. *Quantitative Data Analysis with IBM SPSS 17, 18 & 19*; Routledge: New York, NY, USA, 2013.
86. Ferguson, C.H. An effect size primer: A guide for clinicians and researchers. *Prof. Psychol. Res. Pract.* **2009**, *40*, 532–538. [[CrossRef](#)]
87. Coakes, S.J.; Steed, L.G. *SPSS—Analysis without Anguish*; John Wiley & Sons: Brisbane, Australia, 1999.
88. Chan, Z.C. A systematic review of creative thinking/creativity in nursing education. *Nurse Educ. Today* **2013**, *33*, 1382–1387. [[CrossRef](#)]
89. Bacon, D.R. An examination of two learning style measures and their association with business learning. *J. Educ. Bus.* **2004**, *79*, 205–208. [[CrossRef](#)]
90. Norman, G. When will learning style go out of style? *Adv. Health Sci. Educ. Theory Pract.* **2009**, *14*, 1–4. [[CrossRef](#)]
91. Penger, S.; Tekavčič, M. Testing Dunn & Dunn's and Honey & Mumford's learning style theories: The case of the Slovenian higher education system. *Management* **2009**, *14*, 1–20.
92. Al Maghraby, M.A.; Alshami, A.M. Learning style and teaching method preferences of Saudi students of physical therapy. *J. Fam. Commun. Med.* **2013**, *20*, 192–197.
93. Golen, S.; Burns, A.C.; Gentry, J.W. An analysis of communication barriers in five methods of teaching business subjects. *J. Bus. Commun.* **1984**, *21*, 45–52. [[CrossRef](#)]
94. Kirschner, P.A.; van Merriënboer, J.J.G. Do learners really know best? Urban legends in education. *Educ. Psychol.* **2013**, *48*, 169–183. [[CrossRef](#)]
95. Kharb, P.; Samanta, P.P.; Jindal, M.; Singh, V. The learning styles and the preferred teaching—Learning strategies of first year medical students. *J. Clin. Diagn. Res.* **2013**, *7*, 1089–1092. [[CrossRef](#)] [[PubMed](#)]

