

The Relationship Between Teaching Styles and Autonomous Motivation Among the Faculty Members of Tabriz Universities

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ABSTRACT

Background: The present study aimed to identify teaching styles and determine their correlation with autonomous motivation among the faculty members of two universities in Tabriz, Iran.

Methods: This cross-sectional study was conducted among 305 faculty members of humanities, basic sciences, engineering, agriculture, and medical sciences departments at Tabriz Universities. The samples were selected through stratified random sampling during the first semester of 2018-19. Research instruments included the Staffordshire Evaluation of Teaching Styles questionnaire, and the Autonomous Motivation for Teaching questionnaire. Data were analyzed using Pearson correlation, MANOVA, and Friedman tests in SPSS v.23. All statistical tests were conducted at a significance level of 0.05.

Results: A significant difference was found among faculty members in the "all-round flexible and adaptable", "official formal curriculum", "straight facts, no nonsense", and "big conference" styles ($P < 0.05$), but they were not significantly different in "sensitive student-centered", and "one-off" styles ($P > 0.05$). There were positive correlations between external motivation on the one hand, and all-round flexible and adaptable, official formal curriculum, and one-off styles on the other ($P < 0.001$), and negative correlations between external motivation and straight facts no nonsense style ($P = 0.001$). Positive correlations were also found between internal motivation and student-centered ($P = 0.001$), big conference ($P = 0.002$), and one-off ($P = 0.003$) styles, and between identified motivation and student-centered, straight facts no nonsense, and big conference styles ($P < 0.001$). Besides, internal motivation was negatively correlated with all-round flexible and adaptable ($P < 0.001$), and official formal curriculum ($P = 0.003$) styles, and intrinsic motivation was positively correlated with student-centered ($P = 0.001$) and big conference ($P < 0.001$) styles.

Conclusion: Correlations were established between teaching styles and autonomous motivation for teaching, so that productive styles, such as the "sensitive student-centered" teaching style, were mostly correlated with intrinsic motivation, and reproductive styles, such as the "big conference" teaching style, showed correlations with external types of motivation among faculty members.

Keywords: Teaching styles, Motivational factors, Autonomous motivation

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Introduction

Being the core activity in higher education, teaching owes its effectiveness to flexibility, energy, and professional commitment of faculties (1) that are the key agents in higher education institutions, and their performance plays an essential role in the efficiency of the entire education system. Their specialized knowledge can evidently work well when coupled with appropriate teaching styles (2). Teaching style is a pattern that emerges from teachers' beliefs, knowledge, performance, and behavior during the teaching and learning process (3). Teaching styles can generally be divided into two categories of traditional, teacher-centered styles like lectures, and modern student-centered styles (4) such as the participatory method, online teaching, and e-learning. Due to the growing trend of student-centered teaching in universities, the latter style has been popularized as an alternative or an adjunct to traditional lectures (5), and this coincides with an increasing proportion of non-traditional students as a result of widening participation policies in higher education (6). Teaching styles are categorized by several classification schemes (7-9), one of which was proposed by Mohanna et al. (10), and included six teaching styles in higher education. The first style is represented by an all-round flexible and adaptable teacher who can effectively use lots of different teaching activities and is very aware of the way the whole environment affects both teachers and learners. The second style involves a sensitive, student-centered teacher who is uncomfortable to do straight presentations. The third style is that of an official formal curriculum teacher who is well-practiced, teaches according to the formal curriculum, and pursues external goals for teaching. The fourth style features a straight facts no nonsense teacher who teaches apparent facts, talks in a direct way, usually concentrates on specific skills, and avoids multi-disciplinary teaching and learning. The fifth style is represented by a big conference teacher who likes nothing better than to stand up in front of a big audience, and finally, the sixth style

features a one-off teacher who likes to teach complete bits of teaching, often on an ad hoc basis, with no props to help and no follow-up (10).

One of the key factors affecting faculty members' teaching styles is the autonomous motivation for teaching (11). According to the Self-Determination Theory of Roth et al. (12), there are four types of motivation including external motivation, internal motivation, identified motivation, and intrinsic motivation. Faculty members' morale and motivational state are conducive to academic progress and optimized output of higher education systems. Moreover, these factors and their outcomes can greatly affect the atmosphere, culture, quality of communication and original research, and educational and social services of universities (13). Positive thinking among faculties enhances their job motivation and thereby improves their efficiency, meaning that there is a reciprocal correlation between motivation, performance and job satisfaction. Thus, providing an adequate scientific and research context, applying appropriate teaching methods and raising faculty members' motivation will have a positive impact on the teaching and learning procedures (14).

Some prior studies have established the correlation between teaching styles and motivational factors (15-17). Hein et al. (18) confirmed a positive correlation between autonomous motivation for teaching and student-centered teaching styles. Han and Yin (11) indicated that motivation was a crucial component to enhance classroom effectiveness and it was explored in terms of "teaching style, teacher approaches to teaching, teaching practice, and instruction behaviors regarding teacher motivation factors". Soenens et al. (19) revealed that teachers' autonomous motivation for teaching determined their self- and student-reported engagement in autonomy-supportive teaching, whereas the controlled motivation was related to teachers' dependence on a more controlled teaching style. In a similar vein, teachers' self-determined motivations,

such as intrinsic and identified motivation, have been found to relate to positive attitudes toward innovative and student-centered teaching styles, greater use of motivational strategies for student engagement, higher teaching skill, and participation in teaching-learning process (20, 21). In Iran, Ghanizadeh and Jahedizadeh (22) demonstrated the contribution of creativity to the adaptation of student-centered teaching styles on the one side and the influence of these styles on the reduction or prevention of burnout on the other. Another study (23) revealed a significant positive correlation between emotional intelligence among Iranian teachers of English as a Foreign Language (EFL) and their teaching styles. Baleghizadeh and Shakouri (24) presented evidence of a positive correlation between teachers' self-efficacy and their teaching styles. Roohani and Dayeri (25) showed that EFL teachers had low levels of burnout and were autonomously motivated in their teaching. Another study (26) also indicated that altruistic and intrinsic factors were the major motivations for EFL teachers.

Autonomous motivation for teaching boosts autonomy-supportive teaching in several ways (12). In other words, autonomously motivated teachers possess expert knowledge in their specialized fields and teaching styles, and are sympathetic to autonomous motivation and its benefits. Moreover, these teachers display greater resilience in the face of challenges, are less concerned with self-image, and opt for supportive teaching styles. Based on these considerations, the present study assumes a relationship between teachers' motivation to teach and their teaching styles.

Teaching styles and motivation have been subject to several studies in different contexts. Despite the importance of motivation and its effect on various individual, social, and organizational aspects, no research has so far investigated a possible correlation between faculty members' teaching styles and their motivational state. To fill in this gap, the present study sought to identify the dominant teaching styles of faculty members

in the major fields offered by two universities in Tabriz, Iran, and to determine if there is a correlation between these styles and faculty members' autonomous motivation. Specifically, an attempt was made to answer the following questions:

1. Is there a correlation between the teaching styles of faculty members in major fields and their teaching motivation?
2. Is there a difference between the teaching styles of faculty members in major fields?
3. What is the dominant teaching style of faculty members in major fields?

Methods

Study Design

The present cross-sectional descriptive-correlational study was conducted in the first semester of the academic year 2018-19 to identify teaching styles and their correlations with motivational factors among the faculty members of Tabriz universities. Because of their availability to the researchers, 700 faculty members in the fields of humanities, basic sciences, agriculture, engineering, and medical sciences were selected as the participants of this study.

Participants and Settings

The study population consisted of 600 faculty members in the fields of humanities, basic sciences, agriculture, and engineering at the University of Tabriz and 100 faculty members of medical sciences at Tabriz University of Medical Sciences. The participants who failed to complete the questionnaires were excluded and then 305 participants were selected using Krejcie and Morgan's (27) table and the stratified random sampling method. Accordingly, by dividing the entire population into homogeneous groups, samples were selected from the humanities (n=79), basic sciences (n=36), agriculture (n=41), engineering (n=77), and medical sciences (n=72).

Data Collection Tools

The instruments included the Staffordshire

Evaluation of Teaching Styles (SETS) Questionnaire of Mohanna, Chambers, and Wall (10) and the Autonomous Motivation for Teaching (SDT) Questionnaire of Roth, Assor, Kanat-Maymon, and Kaplan (12). The SETS questionnaire contained six subscales including All-round flexible and adaptable, Sensitive, student-centered, Official formal curriculum, Straight fact, no nonsense, Big conference, and One-off styles (10), and 24 items were scored on a 5-point Likert scale from one (Not agree at all) to five (strongly agree). The SDT questionnaire contained four subscales including external motivation, internal motivation, identified motivation, and intrinsic motivation (12), and 16 items were scored on a 5-point Likert scale from one (Not agree at all) to five (strongly agree). The face and content validities of these two questionnaires were already been evaluated by several researchers. However, considering that both of them were administrated for the first time in Iran, the English versions of the questionnaires were translated into Persian to examine their face and content validities besides their reliability. The Forward-Backward translation method was used for translating the questionnaires. First, the original questionnaires (SETS and SDT) were independently translated into Persian by two translators who were fluent in English (forward translation). After comparing the two versions and resolving the inconsistencies, they were back-translated into English by an independent bilingual speaker who was not aware of the original version, and then the new English versions of questionnaires were compared with the original versions in terms of concept to obtain final questionnaires. The face and content validities of the questionnaires were assessed using descriptive scales by an expert panel consisting of 10 faculty members from different departments who were selected through the purposive sampling technique. Face validity was measured using the aspects of fluency and cultural acceptance in society based on a 6-point scale (very weak, weak, moderate, good, very good, and best). The content validity index (CVI) values were 0.85

and 0.83 for SETS and STD questionnaires, respectively. To determine the reliability of the questionnaires, they were distributed to 50 faculty members, and their Cronbach's alphas were calculated afterward. Some items were revised in the questionnaires to prepare and implement their final versions. According to Cronbach's alpha, the obtained reliability values were $\alpha=0.78$ and $\alpha=0.76$ for SETS SDT questionnaires, respectively.

Within the first week, the questionnaires were distributed among the participants who were informed about the goals and nature of the study through a brief paragraph included in the questionnaires. The average time needed to complete the questionnaires was 20 min. The collection of the questionnaires was started after one day and lasted one week on average.

Statistical Methods

The data collected through the questionnaires were analyzed descriptively and inferentially using SPSS v.23. Descriptive analysis was used in the forms of means, median, and standard deviation. Considering that both interval level variables were rated on the Likert scale, Pearson correlation was used to measure the correlation between the variables for the inferential analysis. Also, Multivariate Analysis of Variance (MANOVA), which is a procedure used for comparing the response-variable means across multiple groups (28), was used for intergroup comparisons and determining the difference between the teaching styles of the faculty members in Major Fields. Friedman's test was used for intragroup comparisons and then ranking of teaching styles of the faculty members in Major Fields. It is a non-parametric statistical test used for comparing three or more matched groups and ranking the values from low to high in each matched set (29).

Ethical Considerations

This study was approved by the Ethics Committee of Research at the University of Tabriz. All the participants were fully

informed about the nature and confidentiality of the study, and their personal consent was obtained before the start of the study, assuring the confidentiality of their information.

Results

A total of 314 faculty members of universities in Tabriz participated in the study and returned the completed questionnaires. After gathering the data, nine participants were excluded because of returning incomplete questionnaires, leaving a total of 305 participants. Based on the demographic information, 76.3% and 23.6% of the 305 participants were respectively faculty members of the University of Tabriz and the Medical Faculty of Tabriz University of Medical Sciences. In terms of gender, 80.3

and 19.7% of the subjects were male and female, respectively. In terms of academic rank, assistant professors had the highest frequency (65.9%) among the studied faculty members.

Descriptive information related to teaching styles and teaching motivation of faculty members in Major Fields of universities in Tabriz is presented in Table 1.

As shown in Table 1, the sensitive, student-centered teaching style and the intrinsic motivation for teaching have the highest mean values, and the Straight facts, no nonsense teaching style, and external motivation for teaching have the lowest mean values among the faculty members in Major Fields.

Table 2 represents the correlation coefficients between teaching styles of faculty

Table 1. Descriptive Information of Teaching Styles and Autonomous Motivation for the teaching of Faculty members in Major Fields

Major Fields	Teaching style					Teaching motivation				
	All-round flexible and adaptable	Sensitive, student-centered	Official formal curriculum	Straight facts, no nonsense	Big conference	One-off	External	Internal	Identified	Intrinsic
N	305	305	305	305	305	305	305	305	305	305
Mean	13.55	15.20	12.80	12.47	14.39	13.32	12.06	14.17	14.94	15.61
Median	13	15	13	13	14	13	12	14	15	16
Standard Deviation	2.45	2.03	2.56	2.36	1.89	2.18	3.22	2.52	2.81	2.45

Table 2. Correlation coefficients between teaching motivation and teaching styles of faculty members in Major Fields

Teaching motivation	Teaching style	All-round flexible and adaptable	Sensitive, student-centered	Official formal curriculum	Straight facts, no nonsense	Big conference	One-off
		Internal	Pearson correlation	0.046	0.193	-0.008	0.078
	P value	0.427	0.001	0.891	0.174	0.002	0.003
External	Pearson correlation	0.400	0.040	0.372	-0.195	-0.063	0.289
	P value	0.000	0.492	0.000	0.001	0.269	0.000
Identified	Pearson correlation	-0.327	0.219	-0.171	0.266	0.357	0.025
	P value	0.000	0.000	0.003	0.000	0.000	0.664
Intrinsic	Pearson correlation	-0.026	0.186	0.039	0.092	0.229	-0.065
	P value	0.651	0.001	0.498	0.109	0.000	0.261

members in Major Fields and their teaching motivation (Question 1) determined by the Pearson correlation test.

According to Table 2, there are significant positive correlations between internal motivation with sensitive, student-centered ($P=0.001$), big conference ($P=0.002$), and one-off styles ($P=0.003$), as well as between external motivation with all-round flexible and adaptable, official formal curriculum, and one-off styles ($P<0.001$); there is a significant negative correlation with straight facts and no nonsense style ($P=0.001$). Significant positive correlations are also observed between identified motivation with sensitive, student-centered, straight facts, no nonsense, and big conference ($P<0.001$) styles. Identified motivation also has significant negative correlations with all-round flexible and adaptable ($P<0.001$) and official formal curriculum ($P=0.003$) styles. Finally, there were significant positive correlations between intrinsic motivation with sensitive, student-centered ($P=0.001$) and big conference ($P<0.001$) styles.

Table 3 shows the difference between teaching styles of faculty members in Major Fields (Question 2) determined by the MANOVA.

The Pillai's trace test was used due to rejecting the MANOVA assumption of homogeneity of variance-covariance metrics of groups, and the results are presented in Table 3.

According to Table 3, the significance level ($P<0.001$) indicates a significant difference between faculty members in Major Fields in at least one of the teaching styles. Teaching styles in which there was a significant difference between faculty members in Major Fields were determined by the MANOVA. The results showed a significant difference between faculty members in Major Fields in the all-round flexible and adaptable, official formal curriculum, straight facts, no nonsense

teacher, and big conference styles ($P<0.05$), but they were not significantly different in sensitive, student-centered, and one-off styles ($P>0.05$).

The reasons for these significant differences were determined using the Games-Howell Post hoc test (to meet the standards of the Journal, and the related Tables are represented here). In terms of using the all-round flexible and adaptable style, there were significant differences between humanities and basic sciences fields ($P<0.05$), basic sciences and the other four fields of humanities, medical sciences, engineering, and agriculture ($P<0.05$), medical sciences and basic sciences ($P<0.05$), and engineering and basic sciences ($P<0.05$). However, no significant differences were found between the agriculture field and the other four fields in using this style ($P<0.05$). This implies that the faculty members of the basic sciences used the first teaching style less than the other major fields. There were no significant differences between the faculty members in the major fields concerning the use of the sensitive, student-centered style ($P<0.05$).

In terms of using the official formal curriculum style, there were significant differences between the humanities field and the fields of basic sciences and engineering ($P<0.05$), the basic sciences field and the fields of humanities, medical sciences, and engineering ($P<0.05$), the medical sciences and basic sciences fields ($P<0.05$), and engineering and humanities fields ($P<0.05$). No significant differences were detected between the agriculture field and the other four fields in using this style ($P<0.05$). These results indicate that the faculty members in the basic sciences field used the third style less than the other major fields.

In the use of the straight facts no nonsense style, there were significant differences between humanities and basic sciences

Table 3. Results of Pillai's trace in Multivariate Analysis of Variance (MANOVA) for comparing teaching styles of faculty members in Major Fields

Effect		Value	F	Hypothesis df	Error df	P value
Group	Pillai's Trace	0.238	3.140	24.000	1192.000	0.000

fields ($P < 0.05$), the basic sciences field and the fields of humanities, medical sciences, and engineering ($P < 0.05$), medical sciences and basic sciences fields ($P < 0.05$), and engineering and basic sciences fields ($P < 0.05$). No significant differences were observed between the agriculture field and the other four fields in using this style ($P < 0.05$). These results show that the faculty members of the basic sciences field used the fourth style more than the other major fields.

In using the big conference style, there were significant differences between the humanities field and the other four fields ($P < 0.05$), the basic sciences field and the fields of medical sciences and engineering ($P < 0.05$), medical sciences and basic sciences fields ($P < 0.05$), and engineering and basic sciences fields ($P < 0.05$). The agriculture field was not significantly different from the other four fields in using this style ($P < 0.05$). These results show that the faculty members of the basic sciences field used the fifth style more than the other major fields. There were no significant differences between the faculty members of the major fields in using the one-off style ($P < 0.05$).

Intragroup comparisons and ranking of teaching styles of the faculty members in each academic field (Question 3) were done using Friedman’s test. The results indicated that the Chi-square values were

111.81, 99.82, 53.99, 66.39, and 35.82 for the fields of humanities, basic sciences, medical sciences, engineering, and agriculture with a Degree of Freedom (df) of 5 at a significance level of $P < 0.001$. A p-value less than the significance level ($P < 0.001$) in these results suggests a significant difference in major fields depending on the type of teaching styles used by the participants. The mean ranks for each of the teaching styles used by the faculty members in major fields are presented in Table 4.

Table 4 shows that the faculty members of humanities, medical sciences, engineering, and agriculture fields mostly use the “sensitive, student-centered style”, and those of the basic sciences field mostly use the “big conference” style. The Dominant Teaching Styles of the faculty members in the major fields of study are presented in Figure 1.

As seen in Figure 1, the majority of the faculty members in the fields of humanities, basic sciences, medical sciences, engineering, and agriculture are respectively under the sensitive, student-centered style (mean=15.58, median=16), the big conference style (mean=15.27, median=15), the sensitive, student-centered style (mean=15.13, median=15), the sensitive, student-centered style mean=15.03, median=15), and the sensitive, student-centered style (mean=15.19, median=16).

Table 4. Median, Mean Rank, and ranking of Teaching Styles of faculty members in Major Fields

Major Field	Humanities			Basic Sciences			Medical Sciences			Engineering			Agriculture		
	Median	Mean Rank	Rank	Median	Mean Rank	Rank	Median	Mean Rank	Rank	Median	Mean Rank	Rank	Median	Mean Rank	Rank
All-round flexible and adaptable	14	3.30	3	11	2.08	5	14	3.69	3	14	3.66	3	13	3.26	3
Sensitive, student-centered	16	4.85	1	15	4.72	2	15	4.62	1	15	4.69	1	16	4.71	1
Official formal curriculum	14	3.09	5	11	1.89	6	13	3.23	4	12	2.71	5	12	2.76	6
Straight facts no nonsense	12	2.16	6	13.5	3.83	3	12.5	2.58	6	12	2.68	6	13	3.23	4
Big conference	15	4.35	2	15	5.21	1	14	3.84	2	14	3.84	2	14	4.15	2
One-off	14	3.24	4	13	3.26	4	13	3.05	5	13	3.42	4	13	2.90	5

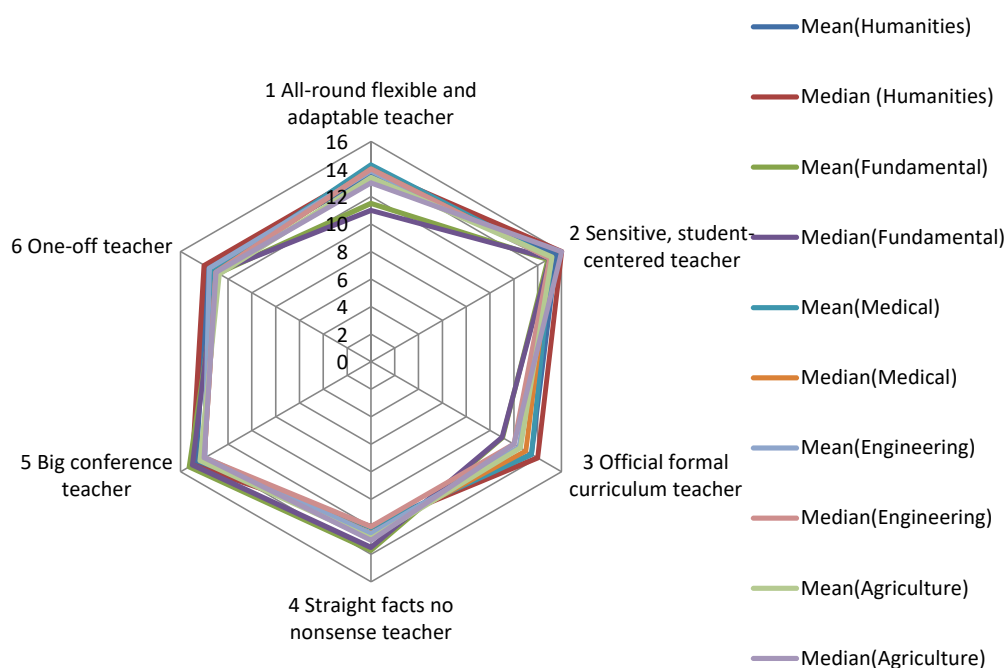


Figure 1. The teaching styles of the faculty members in Major Fields of study

Discussion

This study revealed that the faculty members in the fields of Humanities, Basic sciences, Medical Sciences, Engineering, and Agriculture at Tabriz universities differed significantly in terms of their teaching styles used dominantly in the classroom. Moreover, significant correlations were found between teaching styles and autonomous motivation of faculty members at Tabriz universities.

According to the obtained results, the faculty members of the Humanities field mostly use the “sensitive, student-centered” teaching style, which is in line with those of Khalili Shahabi (30) and Cochran-Smith et al. (31). They argue that since the content of the lessons of the Humanities domain is organized from a range of theoretical to practical materials, there is a need for methods that are appropriate to the active learning styles.

Another result of this study showed that the faculty members of the Basic Sciences field mostly use the “big conference” teaching style. This result is in line with those of Hein et al. (18) and Alaagib et al. (32), but it does not agree with those of Cochran-Smith et al. (31) and Javadi et al. (33). Due to the theoretical nature of the Basic Sciences field and less need for practical activity and involvement,

the “big conference teaching style” is more commonly used in this field (32).

The results of this study showed that the faculty members of the Medical Sciences field mostly used the “sensitive, student-centered” teaching style, which is in line with those of Arbabisarjou et al. (34) and Bechter et al. (35), but it does not correspond to that of Razeghinejad et al. (36). Student-centered learning strategies emphasize the importance of teachers, enable students to focus on practical involvement in the learning process, and empower them to learn about their own development and skills. Although teachers maintain a monitoring role, they encourage students to engage in their own reflective and creative thinking and challenge them to find solutions to problems; therefore, the faculty members of the Medical Sciences field pay more attention to this issue and mostly use the student-centered teaching style in their classes (35).

According to another result of this study, the faculty members of the Engineering field mostly used the “sensitive, student-centered” teaching style, which is in agreement with those of Karimi et al. (37) and Chowdhury (38), but it does not agree with that of Memarian (39). In Engineering classrooms where students deal with inference, it is often

necessary for professors to coordinate their curricula with students' different learning styles and encourage them to describe their ideas and conjectures, identify the potential of these ideas, and draw instructions for further development and expansion of these ideas as diagrams; in other words, the professor must be flexible and use student-centered methods (37).

The results of this study indicated that the faculty members of the Agriculture field mostly used the "sensitive, student-centered" teaching style, which corresponds to those of Khalili Shahabi (30) and Cochran-Smith et al. (31). Agriculture is among the fields of study in which the course is learned in the context of a practical project and the lecture method or formal style has a minor role or is not done at all; thus, the student-centered teaching style is a priority in this field (31).

Regarding the correlation between teaching styles with autonomous motivation for the teaching of faculty members, the results revealed a positive correlation between internal motivation and sensitive, student-centered, big-conference, and one-off teaching styles. This finding is consistent with those of Vallerand et al. (15) and Stolk et al. (16). Internal motivation includes a three-part classification. Its first type is knowledge, which includes the motivation to perform an activity due to the emotions arising from the discovery of new ideas and acquisition of knowledge. Faculty members with this type of internal motivation are very interested in using the big-conference style because it helps them to better provide their new findings and more knowledge for learners. The second type is an achievement related to the feelings relevant to gaining a skill or achieving a goal. Faculty members with this type of internal motivation are very interested in using the sensitive, student-centered teaching style because this helps students to achieve more practical skills. The third type is stimulation that involves the emotions arising from doing an activity, namely excitement and fun, and faculty members having this type of internal motivation are interested in the one-off teaching style since they are active and bring more entertainment to themselves only in this

method (15).

Another finding of this research showed a positive correlation between external motivation with all-round flexible, adaptable and the official formal curriculum styles, and a negative correlation with the one-off teaching style, which is in line with those of Hein et al. (18) and Ryan and Deci (17). Behaviors with external motivation are performed to achieve an instrumental purpose such as gaining reward or avoiding punishment. Since the use of the one-off style does not bring reward or encouragement for faculty members, this teaching style has a negative correlation with external motivation. External motivation does not necessarily indicate the lack of autonomy in the performed behaviors. In the field of education, external motivation can be divided into three levels of self-determination (autonomy), including external regulation (not autonomous at all), internalized regulation (somewhat autonomous), and simulated regulation (mainly autonomous). The first two levels are mostly related to the official formal curriculum teaching style because the professor has less autonomy in these two levels, and external factors, such as prepared curriculum, determine his teaching path. Therefore, external motivation in these two levels has a positive correlation with the official formal curriculum style, but its third level, which is mainly autonomous, has a positive correlation with the all-round flexible style because these professors themselves regulate and present materials and play an active role in students' learning (17).

According to the findings of this study, identified motivation was positively correlated with sensitive, student-centered, and all-round flexibility styles, but it was negatively correlated with official formal curriculum and straight facts, no nonsense teaching styles, which is in line with those of Guay and Bureau (40) and Pitsi et al. (41). They state that the self-check style, which is a kind of the student-centered style, triggers a significantly greater increase in identified regulation motivation, enjoyment, and autonomy than the command-teaching styles. Faculty members having

identified motivation are supportive, present the curriculum in a meaningful way, and consider the emotional welfare of students in anything they do in the classroom (40). Therefore, identified motivation has a positive correlation with sensitive, student-centered and straight facts, and no nonsense teaching styles. On the other hand, when faculty members with identified motivation spend energy on their work, it is important for them to see students feel that the professor cares about them; therefore, they use the all-round flexible teaching style that has a positive correlation with identified motivation. They also try to find interesting topics and new ways of teaching because of their effort to be up-to-date in teaching. Thus, identified motivation has a negative correlation with the official formal curriculum style, which does not pay much attention to providing new information and present the information provided by the curriculum (12).

Another finding of this study indicated that intrinsic motivation was positively correlated with sensitive, student-centered, and big conference teaching styles, which is somehow consistent with those of Pitsi et al. (41) and Hein et al. (18) who reported that productive teaching styles were more strongly related to intrinsic motivation. One of the characteristics of intrinsic motivation is to interact with the activity and show its importance; in this sense, this type of motivation has a positive correlation with the big conference style because this teaching style engages faculty members in activities that they directly seek to teach, hence, they can better interact with that activity and teach it to learners. On the other hand, intrinsic motivation seeks to achieve enthusiasm, self-concept, excitement, and intense concentration, and all these factors are presented in the student-centered teaching style in which the enthusiasm for learning is high, strengthens the students' self-concept, and increases both the excitement for learning and the learners' concentration on learning on their activity. Therefore, intrinsic motivation has a positive correlation with the student-centered teaching style (42).

Totally, this study showed that, except faculty members of the Basic Sciences field who mostly use the "big conference" teaching style, those of the other four Major Fields mostly use the "sensitive, student-centered" teaching style in their classes and have a high intrinsic motivation to teach. This indicates their sense of satisfaction, self-confidence, and strong commitment in work. However, it is recommended that the faculty of Basic Sciences take the needed measures to energize active and student-centered teaching styles and improve teaching performance through organizing training workshops about more student-centered teaching styles for faculty members. This is because moving towards these teaching styles improves students' learning, enhances the performance of the higher education system in achieving its lofty goals, and leads to success in modern teaching styles such as distance education, virtual education, and e-learning. As the main limitation of the present study, it is worth mentioning that the data collection tools were limited to questionnaires and other research tools, such as interviews and observation, were not used here.

For the first time in Iran, the present study used two questionnaires of SETS of Mohanna et al. (10) and SDT of Roth et al. (12) to determine preferred teaching styles of teaching staff and their autonomous motivation for teaching to provide them with enough information that enables them reflect and gain better insight into themselves, modify their teaching style, and adapt their teaching style to their students' learning style. In general, this pioneer study in Iran provides evidence that autonomous motivation for teaching is associated with the use of teaching styles as our findings revealed that productive styles, such as the "sensitive-student-centered" teaching style, were mostly correlated with intrinsic motivation, and reproductive styles, such as the "big conference" teaching style, had correlations with external types of motivation among faculty members of universities in Tabriz. In future research, it is suggested to measure the relationship between teaching

styles and autonomous motivation for teaching of teaching staff in terms of their gender, academic rank, and teaching experience.

Ethical Considerations

This article was extracted from a master's dissertation (No. 17/124455/2) entitled "Correlations between Teaching Styles and Autonomous Motivation among faculty members in the Fields of Humanities, Basic sciences, Engineering, Agriculture, and Medical Sciences at Tabriz Universities" in 2019, approved by the Ethics Committee of Research at the University of Tabriz.

Authors' Contributions

Given that this article is the result of a dissertation, F. M proposed the research idea and monitored the writing process, R. J wrote the dissertation, and A. A revised the dissertation and adapted it to a journal article under the guidance of F. M.

Conflict of Interest

Authors declare that they have no competing interests.

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References

- 1 Tirgar A, Kazemi F, Babazadeh S, Aghalari Z, Gholinia-Ahangar H. Assessing the Students' Viewpoint about teaching a course by several lecturer in Babol University of Medical Sciences. *RME*. 2018; 10(1): 38-30. doi: 10.29252/rme.10.1.38
- 2 Kazemi S, Mohammadi Y, Raeisoon MR. Study of Classroom Management in Birjand University of Medical Sciences from Students' Viewpoint. *RME*. 2015; 7(4): 31-8. doi: 10.18869/acadpub.rme.7.4.31
- 3 Shaari AS, Yusoff NM, Ghazali IM, Osman RH, Dzahir NF. The relationship between lecturers' teaching style and students' academic engagement. *Procedia-Social and Behavioral Sciences*. 2014 Mar 19; 118: 10-20. doi: 10.1016/j.sbspro.2014.02.002
- 4 Rahmanian Koushki A, Barzegar B, Kamalirad E. Developing a Model for Improving the Quality of Accounting Education by Analyzing Teaching Methods Using Grounded Theory. *Journal of Instruction and Evaluation*. 2020; 12(48): 103-130. doi: 10.30495/jinev.2020.672763
- 5 Stephenson J, Brown C, Griffin D. Electronic delivery of lectures in the university environment: An empirical comparison of three delivery styles. *Computers and Education*. 2008; 50(3): 640-651. doi: 10.1016/j.compedu.2006.08.007
- 6 Laing C, Robinson A. The withdrawal of NTS: an explanatory model. *Journal of Further and Higher Education*. 2003; 27(2): 175-185. doi: 10.1080/0309877032000065190
- 7 Evans C. Exploring the relationship between cognitive style and teaching. *Educational Psychology*. 2004; 24(4): 509-531. doi: 10.1080/0144341042000228870
- 8 Palos R, Maricutoiu LP. Teaching for Successful Intelligence Questionnaire (TSI-Q)-a new instrument developed for assessing teaching style. *Journal of Educational Sciences and Psychology*. 2013; 3(1).
- 9 Grasha AF. *Teaching with style*. San Bernardino. CA: Alliance Publishers. Retrieved August. 1996; 18:2009.
- 10 Mohanna K, Chambers R, Wall D. Developing your teaching style: increasing effectiveness in healthcare teaching. *Postgraduate medical journal*. 2007; 83(977): 145-7. doi: 10.1136/pgmj.2006.054106
- 11 Han J, Yin H. Teacher motivation:

- Definition, research development and implications for teachers. *Cogent Education*. 2016 Dec 31; 3(1). doi: 10.1080/2331186X.2016.1217819
- 12 Roth G, Assor A, Kanat-Maymon Y, Kaplan H. Autonomous motivation for teaching: how self-determined teaching may lead to self-determined learning. *Journal of educational psychology*. 2007; 99(4): 761-774. doi: 10.1037/0022-0663.99.4.761
 - 13 Zabardast M, Kahrizi K., khaleghpanah K. The relationship between organizational identity and occupational motivation of academics using the mediating role of social capital. *Sociology of Social Institutions*. 2018; 4(10): 139-160. doi: 10.22080/ssi.2018.1739
 - 14 Sarwar GS, Zerpa C, Hachey K, Simon M, Van Barneveld C. Teaching practices and student motivation that influence student achievement on large-scale assessments. *International Journal of Education*. 2012 Jul 1; 4(3): 88. doi: 10.5296/ije.v4i3.2087
 - 15 Vallerand RJ, Pelletier LG, Blais MR, Briere NM, Senecal C, Vallieres EF. The Academic Motivation Scale: a measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*. 1992; 52(4): 1003–1017. doi: 10.1177/0013164492052004025
 - 16 Stolk JD, Gross MD, Zastavker YV. Motivation, pedagogy, and gender: examining the multifaceted and dynamic situational responses of women and men in college STEM courses. *International Journal of STEM Education*. 2021 Dec; 8(1): 1-9. doi: 10.1186/s40594-021-00283-2
 - 17 Ryan RM, Deci EL. Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*. 2020 Apr 1; 61. 101860. doi: 10.1016/j.cedpsych.2020.101860
 - 18 Hein V, Ries F, Pires F, Caune A, Ekler JH, Emeljanovas A, Valantiniene I. The relationship between teaching styles and motivation to teach among physical education teachers. *Journal of sports science & medicine*. 2012; 11(1): 123. PMID: PMC3737859. PMID: 24137068
 - 19 Soenens B, Sierens E, Vansteenkiste M, Dochy F, Goossens L. Psychologically controlling teaching: Examining outcomes, antecedents, and mediators. *Journal of Educational Psychology*. 2012; 104: 108–120. doi: 10.1037/a0025742
 - 20 Gorozidis G, Papaioannou AG. Teachers' motivation to participate in training and to implement innovations. *Teaching and Teacher Education*. 2014 Apr; 39: 1-11. doi: 10.1016/j.tate.2013.12.001
 - 21 Jansen in de Wal J, den Brok PJ, Hooijer JG, Martens RL, van den Beemt A. Teachers' engagement in professional learning: Exploring motivational profiles. *Learning and Individual Differences*, 2014 Dec; 36: 27-36. doi: 10.1016/j.lindif.2014.08.001
 - 22 Ghanizadeh A, Jahedizadeh S. EFL teachers' teaching style, creativity, and burnout: A path analysis approach. *Cogent Education*. 2016 Dec 31; 3(1): 1151997. doi: 10.1080/2331186X.2016.1151997
 - 23 Mousapour G, Khorram A. The relationship between Iranian EFL teachers' emotional intelligence and their teaching styles. *International Journal of Research Studies in Language Learning*. 2015 Oct; 4(4): 3-14. doi: 10.5861/ijrsl.2015.1019
 - 24 Baleghizadeh S, Shakouri M. Investigating the relationship between teaching styles and teacher self-efficacy among some Iranian ESP university instructors. *Innovations in Education and Teaching International*. 2017 Jul 4; 54(4): 394-402. doi: 10.1080/14703297.2015.1087329
 - 25 Roohani A, Dayeri K. On the Relationship between Iranian EFL Teachers' Burnout and Motivation: A Mixed Methods Study. *Iranian Journal of Language Teaching Research*. 2019; 7(1): 77-99. doi: 10.30466/ijltr.2019.120634
 - 26 Khajavy GH, Ghonsooly B, Fatemi AH. Testing a burnout model based on affective-motivational factors among EFL teachers. *Current Psychology*. 2017 Jun; 36(2): 339-49. doi: 10.1007/

- s12144-016-9423-5
- 27 Krejcie RV, Morgan DW. Determining sample size for research activities. *Educational and psychological measurement*. 1970 Sep; 30(3): 607-10. doi: 10.1177/001316447003000308
 - 28 Finch H. Comparison of the Performance of Nonparametric and Parametric MANOVA Test Statistics when Assumptions Are Violated. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*. 2005; 1(1): 27–38. doi: 10.1027/1614-1881.1.1.27
 - 29 Raad NG. A strategic approach to tourism development barriers in Iran. *Journal of Tourism & Hospitality*. 2019; 8(3):410.
 - 30 Khalili Shahabi M. Comparing teaching styles of faculty members of University of Tabriz and their relationship with students' achievement motivation. *Tabriz: University of Tabriz*; 2017. 86p.
 - 31 Cochran-Smith M, Villegas AM, Abrams L, Chavez-Moreno L, Mills T, Stern R. Critiquing teacher preparation research: An overview of the field, part II. *Journal of Teacher Education*. 2015; 66(2): 109-2117. doi: 10.1177/0022487114558268
 - 32 Alaagib NA, Musa OA, Saeed AM. Comparison of the effectiveness of lectures based on problems and traditional lectures in physiology teaching in Sudan. *BMC Medical Education*. 2019 Dec; 19(1): 1-8. doi: 10.1186/s12909-019-1799-0
 - 33 Javadi N, PanahAli A, AlivandiVafa M. Comparison of the effectiveness of Flipped classroom teaching method and Lecture method on students' academic enthusiasm. *Journal of Research in Teaching*. 2020; 8(2): 161-176. doi: 10.34785/J012.2020.279
 - 34 Arbabisarjou A, Akbarilakeh M, Soroush F, Payandeh A. Validation and normalization of grasha–riechmann teaching style inventory in faculty members of zahedan university of medical sciences. *Advances in medical education and practice*. 2020; 11: 305. doi: 10.2147/AMEP.S244313
 - 35 Bechter BE, Dimmock JA, Jackson B. A cluster-randomized controlled trial to improve student experiences in physical education: Results of a student-centered learning intervention with high school teachers. *Psychology of Sport and Exercise*. 2019 Nov 1; 45: 101553. doi: 10.1016/j.psychsport.2019.101553
 - 36 Razeghinejad MH, Bakhshi H, Mashayekhi N. A survey on teaching style of academic members in Rafsanjan University of medical sciences. *Hormozgan Medical Journal*. 2010; 14(3): 198. <https://magiran.com/p797889>
 - 37 Karimi M, Jaafarinia GR, Amani M. EVALUATING THE RELATIONSHIP BETWEEN FACULTIES' FLEXIBILITY AND STUDENTS' ACTIVE LEARNING. *Majallah-i Amuzih-i Muhandisi-i Iran*. 2015; 16(64): 39. doi: 10.22047/ijee.2015.7952
 - 38 Chowdhury RK. Learning and teaching style assessment for improving project-based learning of Engineering students: A case of United Arab Emirates University. *Australasian Journal of Engineering Education*. 2015 Jan 1; 20(1): 81-94. doi: 10.7158/D13-014.2015.20.1
 - 39 Memarian H. New student-centered methods in Engineering education. *Iranian Journal of Engineering Education*. 2012; 13(52): 1-21. doi: 10.22047/ijee.2012.1794
 - 40 Guay F, Bureau JS. Motivation at school: Differentiation between and within school subjects matters in the prediction of academic achievement. *Contemporary Educational Psychology*. 2018 Jul 1; 54: 42-54. doi: 10.1016/j.cedpsych.2018.05.004
 - 41 Pitsi A, Digelidis N, Papaioannou A. The effects of reciprocal and self-check teaching styles in students' intrinsic-extrinsic motivation, enjoyment and autonomy in teaching traditional Greek dances. *Journal of Physical Education and Sport*. 2015 Jun 1; 15(2): 352. doi: 10.7752/jpes.2015.02053
 - 42 Tehseen S, Hadi NU. Factors influencing teachers' performance and retention. *Mediterranean Journal of Social Sciences*. 2015 Jan; 6(1): 233. doi: 10.5901/mjss.2015.v6n1p233