



Adaptation of the Approaches to Teaching Inventory into Turkish and Analysis of Turkish Academics' Approaches to Their Own Teaching

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Abstract

The aim of this research is to adapt the Approaches to Teaching Inventory into Turkish culture and analyze the teaching approaches of academics working at education faculties in terms of various variables. In the light of this aim, two subsequent sub studies were conducted. In the first phase of the study, the Approaches to Teaching Inventory (ATI) was adapted to Turkish culture. During the adaptation phase, language equivalence was analyzed both through interviews conducted with foreign language experts and through the correlation scores between the original and the Turkish forms. Results of the confirmatory factor analysis which was conducted on data gathered from 140 academics working at 35 different education faculties in Turkey confirmed the two-factor model of ATI as student centered and teacher centered. Reliability studies of ATI were carried out through Cronbach α , and McDonald ω coefficients and results revealed that ATI has the appropriate psychometric properties to be used in Turkish studies. In the second phase of the study, 185 academics working at 31 different education faculties were reached and their teaching approaches were analyzed based on the level of the course, number of students in their classes, their academic titles, and seniority variables. As a result of the analysis, it was found that academics adopted a more teacher-focused approach to teaching at undergraduate level courses whereas they adopted a more student-focused approach to teaching at graduate level courses. It was also found in terms of class size that academics adopted a more teacher-focused approach to teaching when the class size exceeded 20 students. In addition, in terms of academic titles, associate professors adopted a more student focused teaching approach compared to lecturer doctors and research assistant doctors. Moreover, a negative and weak relationship was found between seniority and teacher focused approach to teaching.

Keywords

Approaches to teaching inventory
Teaching approaches of academics
Teacher focused approach to teaching
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Introduction

Recent economic, technological and social-cultural changes throughout the world have brought about the need for a radical change in education. In order to meet the demand of the knowledge society with a human force who is highly educated and equipped with various competences, such concepts as transparency, accountability, and comparability have come into prominence in higher education. In this context, it was decided to raise individuals who could compete at the global level and establish higher education systems through forming a regional higher education unity in Bologna in 1999 with the participation of 29 countries (The European Higher Education Area [EHEA], 2016). In the following years, Bologna process expanded to include 48 different countries with the participation of various countries including Turkey. The qualifications required by the Bologna process have necessitated the update of curriculum and teaching applications of universities as well as an increase in education quality. For this purpose, Higher Education Qualifications Framework (TYÇÇ) was composed in Turkey. In the framework of TYÇÇ, it has been expected that education be carried out through a student-focused approach to teaching to improve students' knowledge, skills and competencies (Yağcı, 2010).

Another important issue with the Bologna process has been the necessity to implement better teaching-learning processes. In this framework, it was highlighted as a result of a comprehensive evaluation of 2015 that student-centered teaching has not been implemented and disseminated well enough in the European higher education area; thus, it must be prioritized through teaching design and applications of teaching (EHEA, 2015a). Especially in the Yerevan Communiqué, education ministers stated that improving the quality of teaching-learning process is an important mission of the European Higher Education Area. In this context, flexibility, improvement of supportive learning environments, individuality, interactivity, involvement in government structures were suggested to expand student centered teaching (EHEA, 2015b). In another study conducted in 2010 by the European Student Center, dissemination of student focused approach to teaching and the organization of in service trainings to promote student focused approach to teaching for academics have been suggested (The European Students' Union, 2010). In contrast, it was stated that Turkey's recent state within the Bologna process has focused on completion of structural reforms but has not been successful enough in terms of student enrollment in higher education, improvement in lifelong learning, and the dissemination of student focused approach to teaching (Yağcı, 2010).

In recent Turkey, it could be observed that teaching and learning centers have been opened up in some universities and efforts have been put into practice for this reason in parallel with the Bologna process in order to improve teaching and learning process, curriculum development and evaluation systems, and to offer better in service training programs to academics. On the other hand, there are only 6 universities with these centers today and various other universities are planning to open up such centers to equip their academics with better pedagogical orientations. It is evident that in Turkey more comprehensive and quality studies need to be carried out on such issues as academics' professional development and the reflection of these on classroom environments.

Student focused approach to teaching could be attributed to first Hayward in 1905 and then to Dewey in 1956 (O'Sullivan, 2004). The paradigm shift from teaching to learning changed and resulted in a balance of power. During this transformation phase, fierce criticism towards teacher-centered methodologies, which focused on knowledge transfer widely, helped the acceptance of student-focused teaching approaches (Barr & Tagg, 1995).

Teaching approaches have been categorized as direct teaching methods, indirect teaching methods, cooperative learning, constructivism, problem based learning, and brain based learning (Aydın, 2014). In this context, student centered teaching can be attributed to constructivism which states

that students should be active and productive in the learning process in terms of learning by doing principle, and that learning as a human right and mission is directly the main responsibility of the learner. Student centered teaching can also be closely attributed to indirect teaching methods in which the responsibility of the teacher is to provide appropriate learning environments for the students to learn through their individual observations and experiences and induction and argumentation methods are used in the teaching process so that students learn through discovery by making connections among learning experiences rather than presenting students the prepackaged information.

Student focused approach to teaching could be defined as a teaching approach in which students contribute to content, activities, materials and learning phase and the teaching process has been planned together with students (Guzman, 2016). In this learning model, the student is at the center of teaching and the power has been distributed evenly between the student and the teacher (Collins & O'Brien, 2003). Although there are various definitions of student centered teaching, the general acceptance on these definitions lie on the equal power distribution and the effective contribution of students into the learning process (Wright, 2011). The fundamental characteristics of teacher and student centered approaches to teaching could be explained as in the following table (Weimer, 2013):

Table 1. The Fundamental Characteristics of Teacher and Student Centered Approaches to Teaching

Characteristics	Teacher Centered Teaching Process	Student Centered Teaching Process
The Balance of Power	Teacher decides on important issues about the course.	Students take an active role during course design process.
The Function of Content	The aim is to cover all the contents of the course.	Contents are only tools to serve for improving problem solving and critical thinking skills of students.
The Role of the Teacher	The teacher transfers knowledge as a subject matter expert.	The teacher helps students to construct their own understanding of the course content and acts as a guide.
The Responsibility for Learning	As each institution is responsible for the achievement level of its students, the responsibility for learning or teaching belongs to teachers or the school.	The responsibility for learning belongs to students who actively take part in the learning process.
The Purpose and Process of Evaluation	The success level of students in multiple-choice examinations should be increased. Quantitative and comparable data are very important to standardize and compare students' achievement.	Alternative assessment and evaluation methods have been used. Process evaluation is more important to foster cooperative work and self-regulation process.

When table 1 is analyzed as a whole, it can be observed in the student centered teaching process that the balance of power is distributed equally between the student and teacher/academic, that contents of lessons are used as tools to carry out meaningful learning, that the teacher/academic holds the role of facilitator rather than an expert of knowledge transfer, that learning responsibility is given to students rather than teachers/academics and that evaluation focuses on process evaluation rather than product evaluation.

Student focused teaching approach contributing to lifelong learning skills, which are important for both higher, and teacher education has important contributions to self-regulated and independent learning processes. In accordance with this, student focused teaching approach improves analytical and critical thinking skills as well as positively affects lifelong learning and self-regulated learning processes (Guzman, 2016; Pinto & Sales, 2008). In addition, in the literature, there are studies confirming that

student focused teaching approach improves student success, leads students to deep learning process, and increases job satisfaction of teachers (Weimer, 2013; Trigwell, Prosser, & Waterhouse, 1999). On the other hand, certain other studies suggest that the number of students in each class be limited if student focused approach to teaching is to be successful (Neumann, Parry, & Becher, 2002; Hall & Saunders, 1997). To this end, in order to get maximum benefit from student centered teaching approach, the number of students in a class seems as an important variable.

Both the dissemination of student focused approach to teaching which is highlighted in the Bologna process and the positive results towards teaching obtained from studies based on student focused approach to teaching provide important proof that the use of student focused approach to teaching as a contemporary teaching approach needs to be strengthened and disseminated throughout Turkey (Yağcı, 2010; EHEA, 2015b). In this regard, general teaching competencies of teacher candidates to be graduated from education faculties have the potential to shed light on student-focused approach to teaching at the university level. In the frame of general teaching competencies, there are various sub competency areas as well as performance indicators such as the following (Ministry of National Education [MEB], 2008):

A1. In terms of “Appreciate and give value to students, being considerate towards them and respect them”:

A.1.1 Providing various activities during the planning and applications to meet the demands of students,

A.1.3 Choosing appropriate materials, resources, and activities to foster learning and taking students’ characteristics into account to improve these,

A.1.4 Providing opportunities to students to offer different activities and to make them participate into these activities,

A.1.6 Valuing students’ products and their opinions,

A.1.9 Providing diversity for in and out of class activities suitable with social and cultural characteristics of students,

A.1.12 Determining learning goals and aims and providing suitable learning environment for students who need special education.

A2. In terms of believing that students can learn and succeed:

A.2.2 Realizing that students have different learning characteristics,

A.2.11. Paying attention to individual differences while conceptualizing expectations.

B2. In terms of paying attention to needs and expectations of students:

B.2. 1 Planning teaching-learning process taking into individual differences into account,

B.2.2 Making adaptations during the teaching-learning process in terms of students’ needs and expectations,

B.2.3 Preparing appropriate learning environments to students having various experiences, characteristics and skills with the help of knowledge and communication technologies,

B.2.4 Diversifying evaluation methods in accordance with students’ needs and interests.

It is important for education faculties to equip students with these performance indicators so that teacher candidates could internalize these indicators. Thus, it is crucial that teacher educators educate teacher candidates to equip them with these performance indicators. As a result, as Kessinger (2011) states, teacher educators also need to meet these performance indicators and design the teaching-learning process accordingly. In the literature, there are some studies suggesting that once the seniority level of academics increase, they tend to adopt a more student focused approach to teaching (Işıkoğlu, Baştürk, & Karaca, 2009) whereas some other studies suggest the opposite stating that more experienced academics have the tendency for more teacher focused approach to teaching since their primary concern is to cover all the chapters or topics of a lesson or they rely on standards more than others (Estes, 2004).

There may of course be different approaches to evaluate the quality of teaching. One of these approaches is the evaluation of academics' self-evaluation of their teaching approaches. For this purpose, ATI has been widely used throughout numerous European countries. ATI is based on a phenomenological study, which analyzes teaching process in two dimensions. These two dimensions are the teaching focused approach to teaching which is based on knowledge transfer and student focused approach to teaching which is based on a conceptual change (Trigwell, Prosser, & Taylor, 1994). The main aim of the teaching focused approach to teaching is the transfer of conceptual knowledge and skills. Readiness level of students is not taken into account and active participation of students into the learning process is not prioritized. On the other hand, student focused approach to teaching aims at creating conceptual changes in the students' points of view. Thus, it is important in the learning process that students construct their own knowledge and take active part during the conceptual change process (Trigwell & Prosser, 1996).

ATI which has been used to determine the quality of teaching and academics' own conceptions into their teaching both provides academics a conception into their own teaching as well as serves as an important tool to teaching and learning centers of universities in terms of curriculum development and evaluation studies. ATI was used in USA and various European countries with its original form to determine academics' conceptions of their teaching approaches. Ylänne, Trigwell, Nevgi, and Ashwin (2006) found out in their study using ATI that teaching approaches differed according to disciplines. For that the study revealed that academics at engineering or hard discipline faculties showed a more teacher focused approach to teaching compared to academics at social sciences or soft discipline faculties who more tended to reflect a student focused approach to teaching. Researchers also found that the number of students in a class is an important factor to determine the teaching approaches. Postareff, Ylänne, and Nevgi (2007) found out in their study using ATI that pedagogical trainings at university level slightly affected academics to adopt a more student focused approach to teaching but they suggest that these trainings be comprehensive and last longer than a year. Similarly, Gibbs and Coffey (2004) suggest as a result of their study that pedagogical trainings might have an influence on the teaching conceptions of academics as long as these trainings last a longer time than usual.

In Turkey, the number of universities whose medium of instruction is 100% English is only 13 out of 193 (British Council, 2015). Thus, determining academics' approaches to their own teaching is very important for the majority of universities with a Turkish medium of instruction (180). With this study, it is aimed to bring about academics' teaching approaches into their own teaching in Turkey in term of various variables and by so an important population on which very limited research has been conducted will be touched upon.

With this study, academics will be able to determine their own conceptions into their teaching and compare them with the teaching approaches offered by the Bologna process. In addition, this study will contribute into teaching and learning centers of universities in Turkey in terms of curriculum development and evaluation. Finally, it will enable university administrations to detect pedagogical needs of academics and thus offer appropriate pedagogical trainings for their staff.

Thus, the aim of this research is to adapt ATI which could be used to determine teaching approaches into Turkish culture and analyze academics' teaching approaches in terms of various variables. For this purpose, first ATI was adapted into Turkish culture and teaching approaches of academics were analyzed based on various variables. Therefore, the answers of the following questions were sought during the study:

- I. During the adaptation of the ATI into Turkish culture:
 - a) Has the linguistic equivalence been validated from the target language into Turkish?
 - b) Does the two-factor measurement model fit with data?
 - c) What are the reliability coefficients of ATI determined by various techniques?
- II. During the analysis of academics' teaching approaches to their own teaching do teaching approaches differ according to:
 - a) the level of the course ?
 - b) the number of students in a class ?
 - c) academic titles ?
 - d) do the teaching approaches have a relationship between seniority of academics?

Method

The research consists of two studies. In the first study, ATI was adapted into Turkish culture and in the second study teaching approaches of academics into their own teaching have been analyzed in terms of various variables. The second study was conducted using instant scanning model. Research conducted using instant scanning model aims at describing the present state as it is (Karasar, 2007).

Study 1: Adaptation of the ATI into Turkish Culture

The present study aims at analyzing Turkish academics' approaches to teaching in terms of various variables as well as adapting ATI which was long before adapted to Spanish (Monroy, Geraldo, & Pina, 2015), Malaysian (Goh, Wong, & Hamzah, 2014), and Dutch (Stes, Gijbels, & Van Petegem, 2008) cultures into Turkish culture. In addition, ATI whose validation studies have been conducted in western or eastern cultures will be conducted in a country having both western-eastern cultural syntheses.

Tezci (2017) in his study on the adaptation of ATI into Turkish collected data from his own students at an education faculty and found out that the scale consisted of two dimensions and four sub dimensions and could be used as a valid and reliable scale in Turkish. He then suggested that other validation studies should be based on data gathered from academics working at universities or teachers working at various schools. When the original form of ATI is analyzed, it is clear that the applications (data gathering process) are conducted with university academics and not student teachers at education faculties (Trigwell & Prosser, 2004; Gibbs & Coffey, 2004; Ylänne et al., 2006). In addition, the majority of adaptation studies of the scale into other cultures also are based on data gathered from academics (Goh et al., 2014; Monroy et al., 2015; Stes et al., 2008).

In order to adapt the original inventory (ATI) into Turkish culture, first of all, written consent was obtained from Keith Trigwell via e mail. In addition, another written consent was obtained from the ethical committee to adapt the inventory into Turkish as well as using it to analyze academics' teaching perceptions into their own teaching. Then the original inventory was translated into Turkish. There were 7 experts in the translation team which comprised foreign language, curriculum development and measurement and evaluation experts. Translations were conducted comparatively by the experts and items which showed a high consistency with the original form were determined. The Turkish form comprising the high consistence items were then analyzed by Turkish language experts in terms of language and expression and required corrections/adaptations were conducted on the Turkish form by the feedback gotten from the Turkish language experts.

After the Turkish translation, the Turkish form was then translated back to English once again by two foreign language experts. These back translations were analyzed by two different English language experts by comparing it with the original form. As a result of the analysis, certain items were corrected so that a consensus was reached among the translators. The Turkish form was then analyzed for its language and expression expertise by 8 experts comprising Turkish language, foreign language, curriculum development, and measurement and evaluation experts. As a result of the opinions of these experts, fine tuning corrections were made on two items and the Turkish form was finalized.

The Turkish form just as in the original inventory comprises 22 items, 11 of which belongs to student focused approach to teaching and the other 11 to teacher focused approach to teaching. The answering alternatives were designed as “almost never (1)”, “rarely (2)”, “seldom (3)”, “often (4)” and “almost always (5)”. The total scores obtained from the two sub scales of the inventory are calculated independently and the higher sub scale scores could be regarded as the dominant teaching approach in terms of the related course and instructor.

The construct validity of the scale was analyzed by means of confirmatory factor analysis, and reliability was analyzed by means of Cronbach α , and McDonald ω coefficients. ATI, which was found to have acceptable psychometric properties was used in the second study to analyze the teaching approaches of academics to their own teaching. This process was explained in the following sections in detail.

Study 2: Analysis of Academics' Teaching Approaches into Their Own Teaching

In accordance with the second study, teaching approaches of academics working at various education faculties of Turkey were determined. In order to gather data, the Turkish adaptation of the inventory which was validated by the first study was used.

Study Groups

In different phases of the study, different work groups were comprised through proper sampling. Proper sampling method represents a process, which starts with attainable participants until all participants are reached in the present time frame (Cohen, Manion, & Morrison, 2007).

4 different study groups were used in the study. Language adaptation studies were conducted on the first group while construct validity and internal consistency studies were carried out on the second group. The third group was used to analyze test-re test reliability studies and the fourth group was used to determine academics' approaches to their own teaching in the frame of the second research question.

During the language adaptation study, four participants were involved in the face to face applications and 21 other participants were involved in the statistical analyses applications. Thus, 25 people participated into the language adaptation process.

Throughout the construct validity and internal consistency analyses, all academics that could be reached either through e mail or face to face communication were asked to participate into the study.

Practice implementation of the ATI was carried out by 140 academics who completed their PhD and work at education faculties throughout Turkey. The distribution of institutions that participant academics of practice implementation work at and their academic titles are presented in table 2.

Table 2. The Distribution of Institutions that Participant Academics of First Stage (Practice) Implementation Work at and their Academic Titles

Institution	Academic Titles				Total
	Lecturer Dr. Research Assist. Dr.	Assist. Prof. Dr.	Assoc. Prof. Dr.	Prof. Dr.	
Abant İzzet Baysal	-	1	-	2	3
Anadolu	4	1	3	-	8
Ankara	5	15	7	10	37
Hacettepe	-	1	-	7	8
Hasan Kalyoncu	-	8	-	3	11
Kastamonu	-	-	2	1	3
Middle East Technical	3	11	10	7	31
TED	-	8	-	1	9
Others	2	12	12	4	30
Total	14	57	34	35	140

The category named as “others” in table 2 represent universities at which the number of participants was less than 3. Thus, participants in this category are classified under one category without exception. 35 different institutions were reached during practice implementation. 12 participants from Hasan Kalyoncu University, 5 from TED University, and another 3 from Gaziantep University, that is, a total of 20 participants took part during the test-re test reliability analysis.

After ATI was adapted into Turkish culture, the second stage of the study to determine academics' approaches to their own teaching was initiated. During this stage, similar to the process of the adaptation phase, academics working at various education faculties of Turkey were reached. The distribution of institutions that participant academics of the second stage implementation work at and their academic titles are presented in table 3.

Table 3. The Distribution of Institutions that Participant Academics of the Second Stage (Actual) Implementation Work at and their Academic Titles

Institution	Academic Titles				Total
	Lecturer Dr. Research Assist. Dr.	Assist. Prof. Dr.	Assoc. Prof. Dr.	Prof. Dr.	
Abant İzzet Baysal	-	1	-	2	3
Ankara	4	9	2	3	18
Gaziantep	-	10	3	-	13
Giresun	-	23	3	1	27
Hacettepe	-	1	-	6	7
Hasan Kalyoncu	-	11	-	7	18
İstanbul	-	5	-	1	6
Nevşehir Hacı Bektaş Veli	-	3	-	-	3
Middle East Technical	2	6	1	1	10
TED	-	14	-	2	16
Trakya	6	30	5	-	41
Others	5	8	8	2	23
Total	17	121	22	25	185

The category named as “others” in table 3 represent universities at which the number of participants was less than 3. Thus, participants in this category are classified under one category without exception. A total 31 different institutions were reached during this stage of implementation.

Data Collection Process

During the adaptation process, analyses regarding the construct validity of the inventory-ATI were conducted through data gathered from both paper and pencil forms (n=58) and online form (n=82). The online form was administered through Google-Forms. As participation was voluntary and there was no personal information in the form, a reminder was not sent to participants. During the second stage of the study, both paper and pencil forms (n=77) and the online form (n=108) were utilized.

Data Analysis

In terms of the language adaptation process, relations between data gathered from the original form and the Turkish form were analyzed by Spearman rank difference correlation coefficient. The construct validity of ATI was analyzed through confirmatory factor analysis (DFA), internal consistency was analyzed through Cronbach α and McDonald ω coefficients, and test-re test reliability was analyzed by means of Pearson correlation coefficient. One way ANOVA for unrelated measures was used when the hypotheses of parametric statistical techniques were confirmed and non-parametric statistics such as Mann-Whitney U and Kruskal-Wallis H tests were used when the hypotheses were not confirmed to answer research questions which required a comparison of mean scores. When statistically significant differences were realized, effect sizes (η^2 / r) were stated and effect size for η^2 was interpreted by means of small (0,01), average (0,06), and big (0,14) (Büyüköztürk, 2016), and for r as 0,2, 0,5, and 0,8 (Field, 2013). Level of significance was determined as 0, 05 in the study.

Results

In this section, first of all, the process of adaptation of the ATI into Turkish was presented. After presenting findings regarding language equivalence, validity and reliability, then findings regarding the actual implementation stage were presented respectively.

Language Equivalence

Language equivalence of the original and the Turkish form was analyzed both by means of quantitative and qualitative approaches. During the qualitative analysis of language equivalence study, face to face interviews were conducted with four foreign language experts. As these experts did not offer any remarkable corrections, no important correction was made on the items. During the quantitative analysis of the language equivalence process, both the original form and the Turkish form were administered to 21 academics working at English language teaching departments three to ten days apart and for each item and sub dimension scores correlation coefficients were calculated by means of measurements gathered from these applications.

Item scores regarding forms in different languages and rank difference correlation coefficients calculated through sub dimension scores are presented in table 4.

Table 4. Correlations between Scores Obtained from Turkish and English Forms

Teacher Focused Approach		Student Focused Approach	
Items	r	Items	r
M1	.86	M3	.63
M2	.77	M5	.88
M4	.88	M7	.81
M6	.83	M8	.82
M9	.93	M13	.75
M10	.92	M14	.79
M11	.95	M15	.94

Table 4. Continued

Teacher Focused Approach		Student Focused Approach	
Items	r	Items	r
M12	.83	M17	.91
M16	.86	M18	.89
M19	.88	M20	.63
M22	.81	M21	.87
Total	.93	Total	.86

It can be seen in table four that correlation coefficients calculated for each item differ between 0, 63 and 0, 95 and correlation coefficients for sub dimension total scores range between 0, 93 for teacher-focused approach and 0, 86 for student-focused approach to teaching. In addition to experts' suggestions that the form could be used in its current format, high correlation coefficient scores also indicate that language equivalence of the two inventories were successfully aligned and thus the Turkish form successfully meets the language equivalence requirements.

Construct Validity

Çokluk, Şekercioğlu, and Büyüköztürk (2014) state that confirmatory factor analysis (DFA) tests whether a pre-defined and limited construct is verified. It has been known that ATI is a measurement instrument comprising two factors each of which consists of 11 items (Trigwell & Prosser, 2004). In terms of construct validity, the congruence between data obtained from 140 academics and two factor construct of ATI was analyzed by confirmatory factor analysis.

As a result of confirmatory factor analysis, it was observed that the t value regarding coefficients of items of ATI in relation to latent variables was between 5, 39 and 10, 53. As known, when the t value is over 2, 58, it shows a statistical significance at 0, 01 level (Kline, 2016). As a result, it could be stated that all items in the inventory are statistically significant at 0, 01 level and no item needs to be excluded from the inventory.

A lot of different indexes are used to evaluate the validity of the model for confirmatory factor analysis. However, insignificance of the χ^2 value and a rate of χ^2/df as below 5 indicate congruence (Sümer, 2000). It was found that χ^2 value regarding ATI was not significant ($\chi^2=224.83$, $df=208$, $p>.05$). Boundary values for some fit indexes and values (Schumacker & Lomax, 2004; Hu ve Bentler, 1999; Sümer, 2000; Thompson, 2004; Kline 2016) obtained as a result of confirmatory factor analysis are presented in table 5.

Table 5. Fit Indexes for Confirmatory Factor Analysis

Index	Boundary Values	Obtained Value
RMSEA	Perfect $\leq .05 \leq$ Good $\leq .08$	.02
GFI	Perfect $\geq .95 \geq$ Good $\geq .90$	.87
AGFI	Perfect $\geq .95 \geq$ Good $\geq .90$	.84
CFI	Perfect $\geq .95 \geq$ Good $\geq .90$	.99
NFI	Perfect $\geq .95 \geq$ Good $\geq .90$	.91
NNFI	Perfect $\geq .95 \geq$ Good $\geq .90$	.98
RMR	Perfect $\leq .05 \leq$ Good $\leq .08$	.09
SRMR	Perfect $\leq .05 \leq$ Good $\leq .08$	.06

When table 5 is analyzed, it can be seen that RMSEA, CFI and NNFI indexes show a perfect fit whereas NFI and SRMR indexes show a good fit. Although AGFI and RMR indexes are slightly below good fit indexes, χ^2 value is not significant, thus, when considered as a whole it could be asserted that data-model fit was successfully provided. Standardized coefficients as a result of DFA, which is the path diagram is shown in figure 1.

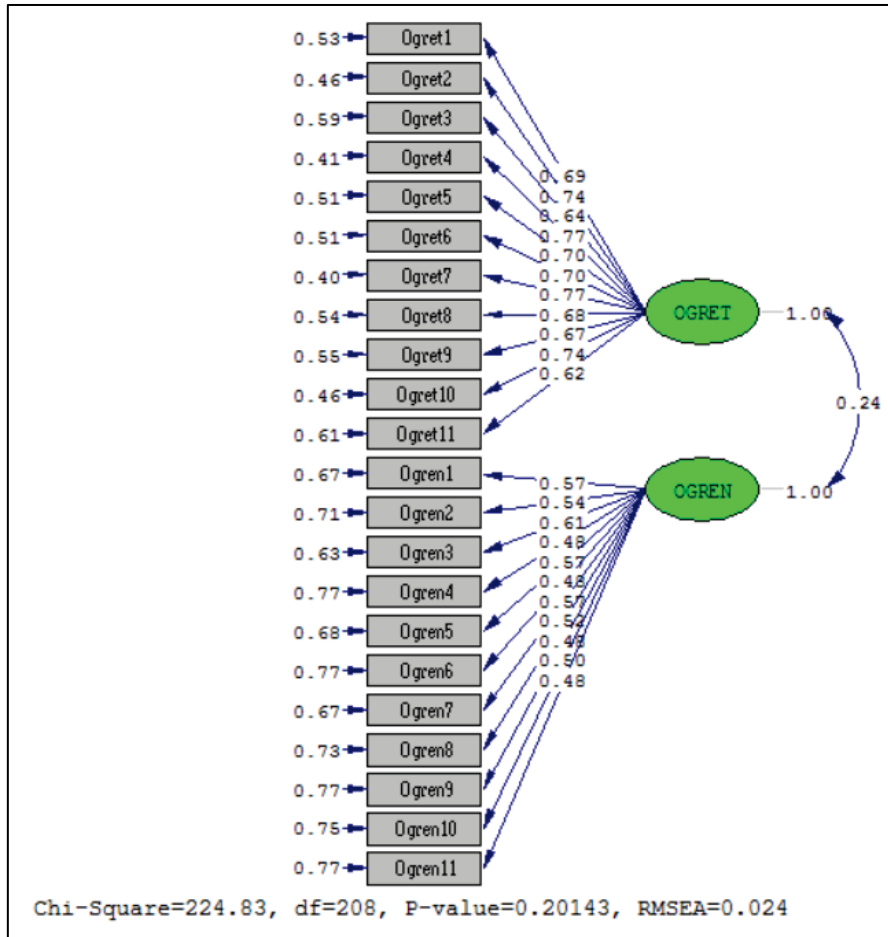


Figure 1. Standardized Coefficients of ATI

It can be observed in figure 1 that factor loads are between 0, 62 and 0, 77 for teacher-focused approach to teaching and between 0, 48 and 0, 61 for student-focused approach to teaching.

Reliability

Reliability evidence regarding ATI were obtained by means of Cronbach α coefficient, McDonald ω structural reliability coefficient which was offered to be used (McDonald, 1985; Yurdugül, 2006) when factor loads were not equal as well as corrected item-total correlation values. Table 6 presents findings regarding reliability coefficients obtained from each sub dimension and total scores as well as item-total correlations.

Table 6. Item-Total Correlations of ATI and Cronbach α and McDonald ω Values

Sub Dimension	Item	Internal Consistency Coefficient	Corrected Item-Total Correlation
Teacher Focused Teaching Approach	M1	Cronbach $\alpha = .91$ McDonald $\omega = .91$	.66
	M2		.70
	M4		.61
	M6		.73
	M9		.68
	M10		.66
	M11		.74
	M12		.65
	M16		.64
	M19		.70
	M22	.59	
Student Focused Teaching Approach	M3	Cronbach $\alpha = .81$ McDonald $\omega = .82$	.50
	M5		.48
	M7		.54
	M8		.43
	M13		.50
	M14		.43
	M15		.51
	M17		.47
	M18		.43
	M20	.44	
	M21	.43	

As can be seen in table 6, Cronbach α and McDonald ω values are between 0,91 and 0,91 for teacher focused approach to teaching and 0,81 and 0,82 for student focused approach to teaching. In order to confirm that an assessment instrument is adequately reliable, the reliability coefficient needs to be minimum .70 (Nunnally & Bernstein, 1994). Internal consistency coefficients of ATI for both dimensions is over .80. Büyüköztürk (2016) states that correlation coefficients between .70 and 1.00 signify high, .30 and .70 signify medium and .00 and .30 signify minimum relationship and states that items with .30 and higher total item correlation distinguish individuals effectively. When corrected total item correlations for sub dimensions are analyzed, it can be seen that all items are over .30. Items for teacher centered teaching approach are between .59 and .74 whereas items for student centered teaching approach are between .43 and .54. As a result, it can be stated that distinctiveness of ATI items is quite high.

Correlations at 0,83 level ($p < .01$) for teacher focused approach and 0,97 level ($p < .01$) for student focused approach were obtained through data gathered in order to determine test- re test reliability from 20 academics within 10 to 20 days.

When the psychometric properties of ATI are taken into account, it can be stated that it has the required psychometric properties to be used in Turkish studies.

Teaching Approaches of Academics in terms of the Level of Their Courses

Scores of participants to both teacher focused approach and student focused approach to teaching were calculated and comparisons were carried out by these scores. Whether teaching approaches of academics differ significantly in terms of their level of courses was analyzed by means of Mann-Whitney U Test and results are presented in table 7.

Table 7. Mann-Whitney U Test Results Regarding ATI Scores of the Level of Course

Sub Dimension	Level	N	Mean Rank	Sum of Ranks	U	p	Effect Size (r)
Teacher Focused	Undergraduate	143	101.49	14513.50	1788.50**	.00	.29
	Graduate	42	64.08	2691.50			
Student Focused	Undergraduate	143	86.63	12388.50	2092.50**	.00	.22
	Graduate	42	114.68	4816.50			

**p<.01

In table 7, it can be observed that there is a statistically significant difference between teacher and student focused approach to teaching in terms of the level of courses in that the difference is in favor of undergraduate level courses for teacher focused approach whereas the difference is in favor of graduate level courses for student focused approach to teaching. In addition, it was observed that the effect size (r) is at medium level.

Teaching Approaches of Academics in terms of the Number of Students in Each Class

During the answering process of ATI, academics were also asked to give answers regarding their number of students in the course. According to the number of students in each class, classes consisting of 1-20 students were coded as small size, 21-40 students as medium size, and 41 and above as large classes. One way ANOVA was used while comparing the class size with scores of teacher-focused approach to teaching, Kruskal Wallis H test was used while comparing it with scores of student-focused approach to teaching. Descriptive statistics regarding class size in relation to teacher and student focused approaches to teaching are presented in table 8. As there were 17 missing data on class size, analyses were conducted through complete data of 171 participants.

Table 8. Descriptive Statistics of Class Size for Sub Dimensions of Teacher and Student Focused Approach to Teaching

Class Size	N	Teacher Focused		Student Focused	
		Mean	Standard Deviation	Mean	Standard Deviation
Small	37	36.95	7.55	48.05	6.17
Medium	36	44.53	7.01	40.58	13.95
Large	98	42.30	6.27	44.13	9.71

In table 8, it can be seen that the highest mean (44.53) belongs to medium size classes and the lowest mean (36.95) belongs to small size classes for teacher focused approach whereas the highest mean (48.05) belongs to small size classes and the lowest mean (40.58) belongs to medium size classes for student focused approach to teaching. Table 9 presents one way ANOVA findings regarding teacher focused approach sub dimension.

Table 9. One way ANOVA Results Regarding Scores of Teachers Focused Approach to Teaching in Relation to Class Size

Source of Variance	Sum of Squares	df	Root Mean Square	F	p	η^2
Between Groups	1157.47	2	578.73	12.82**	.00	.13
Within Groups	7583.28	168	45.14			
Total	8740.75	170				

**p<.01

In table 9, it can be observed that mean scores of teacher- focused approach to teaching significantly change according to class size and the effect size is at medium level [F (2, 168) =12.82, $\eta^2=.13$]. According to Tukey multiple comparison test conducted to observe the difference between the groups, it was found that the mean scores of small size classes was significantly less than medium size and large classes whereas there was no difference between medium size and large classes. Table 10 presents Kruskal-Wallis H test findings regarding student-focused approach to teaching.

Table 10. Kruskal-Wallis Test Results for the Scores of Student- Focused Approach to Teaching According to Class Size

Class Size	N	Mean Rank	df	χ^2	p
Small	37	102.84	2	5.48	.06
Medium	36	81.10			
Large	98	81.44			

In table 10, it can be observed that scores of student-focused teaching approach do not significantly change [$\chi^2 (2,171) =5.48, p>.05$] according to class size.

Teaching Approaches of Academics in terms of Their Academic Titles

Descriptive statistics regarding sub dimensions of teacher and student focused approaches to teaching are presented in Table 11.

Table 11. Descriptive Statistics Regarding Sub Dimensions of Teacher and Student Focused Approaches to Teaching

Title	N	Teacher Focused		Student Focused	
		Mean	Standard Deviation	Mean	Standard Deviation
Lecturer Dr. /Research Assist. Dr.	17	42.24	5.68	40.47	11.85
Assist. Prof. Dr.	121	42.11	7.27	44.35	10.00
Assoc. Prof. Dr.	22	40.14	6.56	47.54	10.34
Prof. Dr.	25	40.44	7.01	45.52	8.72

In table 11, it can be observed that the highest mean (42.24) belongs to Research Assist. Dr. and Lecturer Dr. titles for teacher focused approach sub dimension whereas the lowest mean (40.14) belongs to Assoc. Prof. Dr. title. For student focused approach to teaching, the highest mean (47.54) belongs to Assoc. Prof. Dr. title whereas the lowest mean (40.47) belongs to Research Assist. Dr. and Lecturer Dr. titles. Table 12 presents one way ANOVA findings regarding teacher focused approach to teaching according to academic titles of academics.

Table 12. One way ANOVA Findings Regarding Teacher Focused Approach to Teaching According to Academic Titles of Academics

Source of Variance	Sum of Squares	df	Root Mean Square	F	p
Between Groups	118.13	3	39.38	.80	.50
Within Groups	8943.41	181	49.41		
Total	9061.55	184			

In table 12, it can be observed that mean scores for teacher focused approach to teaching do not significantly change according to academic titles [F (3,181) =.80, $p<.05$]. Table 13 presents Kruskal-Wallis H Test findings regarding student-focused approach to teaching according to academic titles of academics.

Table 13. Kruskal-Wallis H Test Findings Regarding Student Focused Approach to Teaching According to Academic Titles of Academics

Title	N	Mean Rank	df	χ^2	p	Effect Size (r)
Lecturer Dr. / Research Assist. Dr.	17	71.21	3	8.11*	.04	.39
Assist. Prof. Dr.	121	91.22				
Assoc. Prof. Dr.	22	118.86				
Prof. Dr.	25	93.68				

*p<.05

In table 13, it can be seen that scores of student-focused approach to teaching significantly change according to academic titles ($\chi^2=(3,185)=8.11$). According to the multiple comparison test conducted to see the differences among the groups, it was found that there is a statistically significant difference between Research Assist. doctors and Assoc. Prof. doctors in favor of Assoc. Prof. doctors. The effect size regarding this difference was found little ($r=.39$).

Teaching Approaches of Academics According to Seniority

Work years of academics change between 0 to 60 years. When descriptive statistics regarding seniority is analyzed, (mode 6, median 12, mean 14, deviance 1.02, standard error of deviance .18, kurtosis 1.78, standard error of kurtosis .36) it was seen that distribution is not normal; thus, relations between ATI sub dimension scores and seniority level of academics were analyzed through Spearman's Rank Correlation Coefficient. It was found that there is a weak and negative ($\rho=-.23, p<.01$) relationship between seniority level and teacher focused approach to teaching whereas there is not a significant relationship between seniority level and student focused approach to teaching ($\rho=.08, p>.05$).

Discussion, Conclusion and Suggestions

Regarding the adaptation phase of the ATI inventory into Turkish, it was observed that the language equivalence was successfully constructed. In addition, construct validity of the inventory was performed and the reliability coefficients were quite high. As a result, it could be stated that the Turkish form of the ATI inventory can successfully be used as a reliable and valid resource especially to determine the Turkish academics' approaches to their own teaching at the higher education level. In their adaptation study, Stes et al. (2008), researchers concluded that only student focused approach to teaching dimension of the scale had acceptable psychometric properties and thus only utilized this dimension in the following course of their study. In another study conducted to adapt ATI into Malaysian culture by Goh et al. (2014), it was seen that two factor structure with 22 items were not validated. A scale consisting of 17 items better suited the Malaysian culture. Monroy et al. (2015) stated in their study that two items in the inventory did not match the Spanish culture, thus they offered to use the inventory with 20 items. In this present study, however, it was seen that the two factor structure offered by Trigwell and Prosser (2004) was supported. The present study confirms the findings of Tezci (2017) who conducted the study on university students and makes an important contribution to the literature in terms of its applicability and use at the higher education level with academics.

It was found in the study that academics working at education faculties, that are teacher educators, showed a more teacher focused approach to their own teaching at undergraduate level courses whereas they showed a more student focused approach to teaching at graduate level courses. Their tendency to adopt a more teacher focused approach to teaching at undergraduate level courses could stem from such factors as higher number of students at undergraduate level and weaker self-regulated learning strategies of students at undergraduate level, a standard curriculum, structure and learning materials for most undergraduate level courses and knowledge and comprehension level questions and topics to be asked in the KPSS examination. On the other hand, teacher educators might have adopted a more student focused approach to their own teaching at the graduate level courses because they may be freer in their choice of curriculum, evaluation and materials and students' self-regulated learning strategies could be better at this level. In this context, as a result of a study conducted

by Yalçın İncek and Tanrıseven (2012), academics consider student teachers at undergraduate level inadequate in terms of readiness level, self-efficacy and motivation. Besides, researchers concluded that student teachers were accustomed to teacher centered teaching, they were inclined to get information as ready-made, and were inadequate in terms of cooperative study habits.

In terms of the study, it was found that academics' teacher focused teaching approaches tended to be less in small size classes (1-20) compared to large and crowded classes. In short, the less the number of students in a class, academics' tendency to adopt a more teacher focused approach to their own teaching decreases. Neumann et al. (2002) and Hall and Saunders (1997) similarly state in their study that the number of students in each class should be decreased in order to extent the use of student focused approach to teaching. When the data gathered through the study is analyzed, it can be observed that among 171 classes the number of small size classes was 37 (1-20 students), medium size classes was 36 (21-40 students), and large classes (41 and more students) was 98. Thus, the number of large classes is more than the sum of small and medium size classes. This is so important as to show that classrooms at education faculties are mostly crowded in Turkey. Similarly, in their study, Yalçın İncek and Tanrıseven (2012) concluded that both academics and student teachers stated crowded classes as the most important factor to implement student focused teaching.

In terms of academics' titles, it was found in the study that associate professor doctors tended to show a more student focused approach to teaching compared to research assistant or lecturer doctors. Seniority variable also supports these findings. Accordingly, when these two variables are analyzed together, it could be stated that once seniority level of academics increases, their tendency to adopt a more teacher focused approach to teaching decreases. Similarly, Işıkoğlu et al. (2009) found as a result of their study on primary and elementary school teachers that the most experienced teachers tended to show a more student focused approach to their own teaching. Thus this study supports the findings of Işıkoğlu et al. (2009) who suggested that a similar study be carried out at the higher education level with academics. As a result of a study conducted by Vatansever (2011) to reveal the learning approach of clinical educators, it was concluded that young academics need to be supported educational development programs and thus support needs to be provided. In addition, researchers concluded that research assistants as well as academics need to be educated for the basics of clinical education. On the other hand, Estes (2004) states in his study that more experienced teachers could show a more teacher focused approach to teaching because of standards or the concern to cover all the chapters in a program. In addition, Newman (2004) states in his study that students whose readiness level is below the expectations might demand and influence teachers to adopt and use more teacher focused approaches to teaching. More experienced or senior academics might adopt a more student focused approach to teaching because of the number of their academic studies on pedagogy as well as the number of graduate level courses they are teaching at education faculties. On the other hand more inexperienced or less senior academics might be adopting a more teacher focused approach to teaching because of their limited number of academic pedagogical studies and the higher number of undergraduate level courses they are teaching at education faculties. In addition, it is well known that teaching and research experience are related to better teaching.

Suggestions

As Turkey could not gain enough momentum in terms of expanding life-long learning and student focused teaching (Yağcı, 2010) it is evident that student focused approach to teaching should be strengthened and the use of it disseminated starting with education faculties whose main purposes is to educate qualified teacher candidates. For this to achieve, the limited number of teaching and learning centers in Turkish universities (currently there are only 6 centers at TED, KOÇ, Sabancı, Middle East Technical, Abdullah Gül, İzmir Ekonomi, and MEF Universities) should be increased and necessary pedagogical support should be provided to academics. In addition, in service trainings for academics should be extended to cover a longitudinal period of support. The adapted inventory in terms of the present study could show cultural and contextual differences and reveals approaches to teaching in terms of one course or one context. Thus, the same academics' approach to teaching could be different

for another course. As a result, the inventory was suggested to be used together with another inventory or scale for relational purposes (Trigwell & Prosser, 2004). In terms of the present study, approaches to teaching were analyzed according to such variables as the number of students, seniority, level of the course, and title. In the following studies using the adapted scale, teaching approaches of academics working at different faculties as well as the relations between their teaching approaches and students' learning approaches could be explored.

By this way, the study of Ylänne et al. (2006) which explored this relationship could be evaluated in a different culture and context. Although the present study does not analyze this type of a relationship, it is still very prominent because it introduces a valid and reliable adaptation of the scale into Turkish culture and it analyzes academics' teaching approaches in terms of some salient variables. It may be suggested in the scope of this study that pedagogical in service trainings especially for novice academics need to be initiated and strengthened and the number of teaching-learning centers in Turkish universities needs to be increased.

In terms of the number of students, it may be suggested that the number of students at undergraduate level classes should be decreased and multigrade class applications should be stopped. In order for expanding the use of student focused teaching approaches, it may be suggested that pedagogical support be provided by teaching-learning centers of universities and that higher education council should take necessary measures to limit the number of students at undergraduate level courses. The factors or reasons behind the differences between approaches to teaching at graduate and undergraduate levels could be explored by future studies. As Trigwell et al. (1999), Trigwell and Prosser (2004) and Kember (1997) state, adapting or changing a teaching orientation requires a longitudinal mindset change; thus, the pedagogical support and trainings for academics need to be carefully followed through monitoring studies.

Data gathered in terms of this research is limited to academics working at education faculties of Turkey who voluntarily participated into this study. 140 academics participated into the practice implementation phase (regarding first research question) whereas 185 academics participated into the actual implementation phase (regarding first research question) of this study. Thus, data cannot be generalized into all Turkey. In the following studies, it may be suggested to extend the data gathering through different faculties of various universities so that data findings can be generalized to all Turkey. The present study focuses on analyzing academics' approaches to their own teaching. Following research could analyze the relationship between academics' teaching approaches and students' learning approaches. That is, the relationship could be explored by using more than one scale or inventory. In addition, future research could be related with project based, scenario based, story based teaching approaches.

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