

Institutional Teaching Culture Perception Surveys 2018
Preliminary Report for the Research Ethics Board
Ken N. Meadows¹, Lindsay Shaw², Erika Kustra, Debra Dawson¹
1 Western University, 2 Brock University, 3 University of Windsor

**Contributing Research Team: Donna Ellis, Jill Grose, Paola Borin, Kristin Brown, Lori Goff,
Peter Wolf, Joseph Beer, Lynn Taylor**

Higher education institutions have a shared goal of fostering a positive, engaging and successful learning environment for their students. Despite this shared goal, each institution has their own unique culture around teaching, which is impacted by administrative visions and funding, strategic documents and policies, the quality of faculty and staff, and the resources available to enhance and sustain their work. Given their varied roles and competing demands, perceptions of institutional support around teaching may differ from instructors, students and staff, creating tensions between and among the stakeholders who have a direct impact on the culture (Stensaker, 2018). Yet, underlying these differences is a shared objective of improving teaching and learning within the institution, creating opportunities for intentional advocacy through relationships (Roxå & Mårtensson, 2009; 2012; Roxå & Mårtensson, & Alveteg, 2011) and decision-making within and between departmental microcultures (Miller-Young et al., 2017). As demands are reprioritized and changes shift within the institution, teaching culture evolves along with it, making institutional teaching culture complex and difficult to assess at a given time

Understanding how teaching is supported, evaluated, implemented, enhanced and awarded is important given the direct impact that teaching has on student success (Cox, McIntosh, Reason, & Terenzini, 2011), engagement (Grayson & Grayson, 2003) and retention (Berger & Braxton, 1998), faculty motivation and commitment (Feldman & Paulsen, 1999), and staff productivity and well-being (Harter, Schmidt & Keyes, 2003; Lok & Crawford, 2004).

In 2013, a group of educational researchers from nine institutions across Canada, developed a set of three Institutional Teaching Culture Perception (ITCP) surveys from a Productivity and Innovation Fund grant. The surveys are designed to capture a snapshot of an institution's teaching culture from the perceptions of staff, faculty and students, at a particular point in time using six predetermined levers initially guided by the work of Hénard & Roseveare(2012) (Kustra et al., 2015):

- Lever 1: Strategic documents and initiatives prioritize effective teaching
- Lever 2: Assessment of teaching is constructive and flexible
- Lever 3: Effective teaching is implemented
- Lever 4: Infrastructure exists to support teaching
- Lever 5: Broad engagement occurs around teaching
- Lever 6: Effective teaching is recognized and rewarded

Each lever, independently and together as a whole, has an impact on how teaching is viewed within an institution. The levers, while distinct, do interact. For instance, clear strategic plans around teaching and learning (Lever 1) outlines that teaching matters along with research, that goals and objectives around teaching exist and that funding is allocated to improve teaching within units (Gibbs, Habeshaw & Yorke, 2000; Gibbs, Knapper & Piccinin, 2008), and build

carefully designed infrastructure (Lever 4) that supports teaching (Jamieson, 2003; Finkelstein, Ferris, Weston & Winer, 2016). Similarly, if teaching is assessed in multiple ways, instructors can get more robust feedback that is meaningful and constructive (Lever 2), which can improve their pedagogical practice and the student learning experience (Lever 3). Finally, if teaching is recognized (Lever 6), through grants, award celebrations or hiring and tenure practices, it incentivizes teaching engagement and development (Lever 5), not only within departments, but across the institution as a whole. Examining indicators of the presence or absence of levers, enables an institution to, identify specific directions to move forward and improve their institutional culture around teaching.

In 2016, the research team received a Social Sciences and Humanities Research Council of Canada (SSHRC) Insight Development Grant, to conduct the survey in two different phases at six institutions, in order to modify and validate the survey. This report summarizes the results of the second phase.

Method

Participants

Three universities in Southwestern Ontario participated in this second phase of the research to validate the surveys. A total of 33,122 faculty members, undergraduate and graduate students, and staff who support teaching and learning were invited to complete the surveys, with 3981 completing the surveys for an overall response rate of 12.0% (see Table 1). Demographic information for each participant group is available in Tables 2 to 4.

Table 1
Participation Information by Institution for Each Participant Group

Participant Group by Institution	Number Invited	Number of Participants	Participation Rate
Brock			
Faculty	518	121	23.4%
Undergraduate	5000	511	10.2%
Graduate	1578	304	19.3%
Staff	634	57	9.0%
Western			
Faculty	1715	218	12.7%
Undergraduate	9998	948	9.5%
Graduate	6323	649	10.3%
Staff	129	41	31.8%
Windsor			
Faculty	1091	179	16.4%
Undergraduate	5000	432	8.6%
Graduate	834	484	58.0%
Staff	302	37	12.3%

Participant Group by Institution	Number Invited	Number of Participants	Participation Rate
Total			
Faculty	3324	518	15.6%
Undergraduate	19998	1891	9.5%
Graduate	8735	1437	16.5%
Staff	1065	135	12.7%
Grand Total	33122	3981	12.0%

Table 2
Demographic Characteristics of Faculty Participants

	Overall		Brock		Western		Windsor	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender	498	100	112	100	212	100	174	100
Female	260	52.2	60	53.6	91	42.9	109	62.6
Male	236	47.4	52	46.4	119	56.1	65	37.4
Non-Binary	2	0.4	0	0.0	2	0.9	0	0
Faculty	501	100	113	100	213	100	175	100
Arts, Humanities, & Social Science	217	43.3	59	52.2	87	40.8	71	40.6
Business	42	8.4	9	8.0	20	9.4	13	7.4
Education	34	6.8	7	6.2	15	7.0	12	6.9
Engineering	23	4.6	-	-	8	3.8	15	8.6
Graduate Studies	1	0.2	-	-	0	0.0	1	0.6
Health Sciences	55	11.0	24	21.2	18	8.5	13	7.4
Law	9	1.8	-	-	2	0.9	7	4.0
Medicine and Dentistry	31	6.2	-	-	31	14.6	0	0
Science	68	13.6	14	12.4	31	14.6	23	13.1
Other	21	4.2	0	0.0	1	0.5	20	11.4
Primary Role	503	100	115	100	212	100	176	100
Administrator	13	2.6	3	2.6	6	2.8	4	2.3
Adjunct Professor	5	1.0	-	-	2	0.9	3	1.7
Assistant Professor	86	17.1	18	15.7	38	17.9	30	17.0
Associate Professor	172	34.2	50	43.5	69	32.5	53	30.1
Full Professor	118	23.5	32	27.8	59	27.8	27	15.3
Lecturer	18	3.6	-	-	18	8.5	-	-
Sessional	60	11.9	2	1.7	14	6.6	44	25.0
Other	31	6.2	10	8.7	6	2.8	15	8.5
Institution	515	100						
Brock	120	23.3	120	100				
Western	216	41.9			216	100		
Windsor	179	34.8					179	100
Appointment	510	100	117	100	216	100	177	100
Adjunct faculty	6	1.2	0	0	4	1.9	2	1.1
Contract/Sessional	84	16.5	0	0	35	16.2	49	27.7
Lecturer	19	3.7	5	4.3	14	6.5	-	-
Tenured	311	61.0	90	76.9	134	62.0	87	49.2
Tenure Track	62	12.2	15	12.8	24	11.1	23	13.0
Other	28	5.5	7	6.0	5	2.3	16	9.0

	Overall		Brock		Western		Windsor	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Workload Distribution	345	100	98	100	142	100	105	100
40/40/20	267	77.4	89	90.8	95	66.9	83	79.0
Other	78	22.6	9	9.2	47	33.1	22	21.0
	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>
Age	49.6	10.2	50.6	9.00	49.3	10.3	49.4	10.8
Teaching Experience	18.1	10.43	19.4	9.32	18.6	10.9	16.5	10.38

Table 3
Demographic Characteristics of Undergraduate Student Participants

	Overall		Brock		Western		Windsor	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender	1883	100	509	100	943	100	431	100
Female	1343	71.3	371	72.9	675	71.6	297	68.9
Male	532	28.3	137	26.9	265	28.1	130	30.2
Non-Binary	8	0.4	1	0.2	3	0.3	4	0.9
Year of Program	1875	100	510	100	933	100	432	100
One	551	29.4	143	28.0	282	30.2	126	29.2
Two	410	21.9	118	23.1	206	22.1	86	19.9
Three	405	21.6	119	23.3	198	21.2	88	20.4
Four	392	20.9	112	22.0	182	19.5	98	22.7
Five or Above	117	6.2	18	3.5	65	7.0	34	7.9
Enrollment	1873	100	506	100	936	100	431	100
Full-time	1800	96.1	494	97.6	899	96.0	407	94.4
Part-time	73	3.9	12	2.4	37	4.0	24	5.6
Institution	1891	100						
Brock	511	27.0	511	100				
Western	948	50.1			948	100		
Windsor	432	22.8					432	100
Faculty	1883	100	506	100	946	100	431	100
Arts, Humanities, & Social Science	764	40.6	168	33.2	425	44.9	171	39.7
Business	162	8.6	79	15.6	37	3.9	46	10.7
Education	92	4.9	72	14.2	-	-	20	4.6
Engineering	104	5.5	-	-	65	6.9	39	9.0
Health Sciences	327	17.4%	127	25.1	161	17.0	39	9.0
Law	2	0.1%	-	-	2	0.2	-	-
Medicine and Dentistry	27	1.4%	-	-	27	2.9	-	-
Science	369	19.6%	60	11.9	229	24.2	80	18.6
Other	36	1.9%	-	-	-	-	36	8.4

	Overall		Brock		Western		Windsor	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
International Student	1885	100	511	100	942	100	432	100
Yes	100	5.3	30	5.9	59	6.3	11	2.5
No	1785	94.7	481	94.1	883	93.7	421	97.5
	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>
Age	21.1	4.72	21.0	4.07	20.9	4.85	21.6	5.09

Table 4
Demographic Characteristics of Graduate Student Participants

	Overall		Brock		Western		Windsor	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender	1428	100	304	100	646	100	478	100
Female	889	62.3	212	69.7	438	67.8	239	50.0
Male	531	37.2	92	30.3	206	31.9	233	48.7
Non-Binary	8	0.6	0	0	2	0.3	6	1.3
Program Year (Masters)	1032	100	259	100	366	100	407	100
One	623	60.4	146	56.4	233	63.7	244	60.0
Two	325	31.5	88	34.0	112	30.6	125	30.7
Three or more	84	8.1	25	9.7	21	5.7	38	9.3
Program Year (PhD)	379	100	45	100	266	100	68	100
One	98	25.9	15	33.3	62	23.3	21	30.9
Two	74	19.5	13	28.9	44	16.5	17	25.0
Three	68	17.9	6	13.3	52	19.5	10	14.7
Four	69	18.2	7	15.6	52	19.5	10	14.7
Five or Above	70	18.5	4	8.9	56	21.1	10	14.7
Enrollment	1401	100.0	303	100	636	100	462	100
Full-time	1233	88.0	249	82.2	550	86.5	434	93.9
Part-time	168	12.0	54	17.8	86	13.5	28	6.1
Institution	1436	100.0						
Brock	304	21.2	304	100				
Western	648	45.1			648	100		
Windsor	484	33.7					484	100

	Overall		Brock		Western		Windsor	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Faculty	1410	100.0	298	100	636	100	476	100
Arts, Humanities, & Social Science	383	27.2	91	30.6	194	30.5	98	20.6
Business	132	9.4	73	24.5	20	3.1	39	8.2
Education	182	12.9	49	16.4	111	17.5	22	4.6
Engineering	238	16.9	-	-	80	12.6	158	33.2
Graduate Studies	58	4.1	-	-	-	-	58	12.2
Health Sciences	163	11.6	48	16.1	99	15.6	16	3.4
Law	4	0.3	-	-	3	0.5	1	0.2
Medicine and Dentistry	67	4.8	-	-	67	10.5	-	-
Science	156	11.1	37	12.4	62	9.7	57	12.0
Other	27	1.9	-	-	-	-	27	5.7
International Student	1431	100.0	303	100	645	100	483	100
Yes	449	31.4	99	32.7	130	20.2	220	45.5
No	982	68.6	204	67.3	515	79.8	263	54.5
Terms as GTA	1403	100.0	303	100	639	100	461	100
0	637	45.4	114	37.6	294	46.0	229	49.7
1-2	331	23.6	99	32.7	138	21.6	94	20.4
3-4	210	15.0	42	13.9	96	15.0	72	15.6
5-6	96	6.8	28	9.2	41	6.4	27	5.9
7 or more	129	9.2	20	6.6	70	11.0	39	8.5
	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>
Age	28.9	7.95	28.4	8.06	30.3	8.69	27.3	6.36

Table 5
Demographic Characteristics of Staff who Support Teaching and Learning

	Overall		Brock		Western		Windsor	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender	134	100	57	100	41	100	36	100
Female	107	79.9	44	77.2	37	90.2	26	72.2
Male	27	20.1	13	22.8	4	9.8	10	27.8
Non-Binary	0	0	-	-	-	-	-	-
Appointment	134	100	56	100	41	100	37	100
Permanent Full-time	110	82.1	41	73.2	33	80.5	36	97.3
Permanent Part-time	6	4.5	5	8.9	-	-	1	2.7
Contract	17	12.7	9	16.1	8	19.6	-	-
Other	1	0.7	1	1.8	-	-	-	-
Institution	135	100						
Brock	57	42.2	57	100				
Western	41	30.4			41	100		
Windsor	37	27.4					37	100

	Overall		Brock		Western		Windsor	
	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>
Age	40.4	11.45	39.4	12.39	39.0	8.74	43.6	12.43
Years Working at University	9.8	8.84	7.8	7.70	10.3	9.40	12.4	9.33

Measures

Participants completed three sets of items: Demographic items, the Institutional Teaching Culture Perception Survey (ITCPS) items, and validation items. Each is addressed in turn below by participant group.

Demographic items. All participants completed open-ended items assessing their age and gender. Faculty members and students also completed an institution-specific item assessing their primary faculty of employment (faculty members) or primary faculty of registration (students). The other demographic items varied by the three participant groups.

Faculty members. Faculty members completed closed-ended items assessing their primary role with the university (e.g., administrator, assistant professor, sessional instructor), appointment type (e.g., tenured, tenure track, sessional) and, for those whose appointment type was tenured or tenure track, their workload distribution (i.e., “40 research, 40 teaching, 20 service” or “other”). The role and appointment type response options varied slightly by institution given different configurations at these universities. An open-ended item assessed faculty members’ years of teaching experience.

Students. All students completed close-ended items assessing their enrollment (i.e., full-time, part-time), international student status (i.e., yes, no), and their program (i.e., undergraduate, graduate). For undergraduate participants, they also indicated the current program year (e.g., Year 1, Year 2, Year 5 or more). Graduate participants indicated their degree (i.e., Master’s, Doctoral), program year, and terms/semesters of experience as a Graduate Teaching Assistant. There were slight variations in language and response options due to institutional differences.

Staff. Staff who support teaching and learning completed open-ended items assessing their primary department/unit and the number of years that they had worked at the institution. They also completed a close-ended item that assessed the type of appointment they have (e.g., permanent full-time, contract part-time), the response options for which varied slightly across institutions.

ITCPS. The three versions of the ITCPS were designed to assess the extent to which faculty members, students, and staff who support teaching and learning, heretofore referred to as staff, agree that indicators of a quality teaching culture were evident at their institutions and the importance that these constituencies placed on these indicators. The items vary across the three surveys to reflect the different perspectives that the constituent groups would have on their institution’s teaching culture but all were designed to reflect six dimensions of teaching culture outlined by Hénard & Roseveare (2012; see Table 6). The faculty, student, and staff versions of the survey consist of 37, 31, and 33 items respectively. All surveys items are rated twice, once for agreement (1 = *Very Low Agreement* to 5= *Very High Agreement*) and once for importance (1 = *Very Low Importance* to 5= *Very High Importance*).

Table 6
ITCPS Levers with Example Items

Lever	Example Items within Lever
1) Institutional, strategic initiatives & practices prioritize effective teaching	<p>...teaching is considered a priority in the primary institutional strategic plan.</p> <p>...institution-wide initiatives promote innovative teaching practices.</p>
2) Assessment of teaching is constructive & flexible	<p>...students are invited to provide feedback to their instructors in addition to end of course evaluations.</p> <p>...student evaluations of teaching are taken into consideration in hiring, promotion and tenure practices.</p>
3) Effective teaching is implemented	<p>...instructors adopt a variety of approaches to teaching and learning.</p> <p>...instructors tell their students how their course fits into the curriculum toward a degree.</p>
4) Infrastructure exists to support teaching	<p>...learning spaces such as classrooms, labs and/or studios are designed to support learning (e.g., movable chairs, sufficient space, appropriate tools and technologies).</p> <p>...instructors have access to adequate materials/supplies to provide a good learning environment.</p>
5) Broad engagement occurs around teaching	<p>...students are involved in activities that foster effective teaching across the institution (e.g., teaching-related research, teaching award committees).</p> <p>...teaching assistants provide effective support for student learning.</p>
6) Effective teaching is recognized & rewarded	<p>...there are institutional rewards for effective teaching (e.g., financial incentives, teaching awards, etc.).</p> <p>...teaching accomplishments, contributions, and/or awards are publicized and/or celebrated.</p>

Note. Two example items that are common to all three surveys are provided for each lever, except for lever two which includes examples that are only common to the faculty and student versions. Each item is preceded by the phrase “At my institution,” and is rated twice, once for agreement and once for importance.

Validation Items. For each survey version, two sets of validation items were included. All versions of the survey included an adapted version of the Learning subscale of the Students’ Evaluations of Educational Quality (SEEQ; Marsh, 1982) to reflect the extent that students at that institution are learning in their courses. Examples items are “At my institution, the courses are intellectually challenging and stimulating” and “At my institution, students learn and understand the subject materials of their courses”. Items are rated in a 5-point Likert scale (1 =

Strongly Disagree to 5 = *Strong Agree*). Marsh (1982) provides evidence of the validity and reliability of the SEEQ.

Faculty. Faculty also completed the 11-item Conceptual Change/Student Focus subscale of the Revised Approaches to Teaching Inventory (ATI-CC/SF; Trigwell, Prosser, & Ginns, 2005) which examines to what extent "...teachers have a student-focused strategy with the aim of changing students' way of thinking about the subject matter" (Trigwell et al., 2005; p. 352). Faculty rate the items on a 5-point scale reflecting the extent to which the statements are true of them (1 = *Only Rarely True for Me* to 5 = *Almost Always True for Me*). Example items include "In my interactions with students I try to develop a conversation with them about the topics they are studying" and "I set aside some teaching time so that the students can discuss, among themselves, key concepts and ideas". Support for the reliability and validity is provided by Trigwell, Prosser, and colleagues (e.g., Prosser, & Trigwell, 2006, Trigwell, & Prosser, 2004, Trigwell et al., 2005; Trigwell, Prosser, & Waterhouse, 1999).

Student. Undergraduate and graduate students also completed the 8-item Cognitive Engagement subscale of the Student Engagement Questionnaire (SEQ-CE; Reeve & Tseng, 2011) which examines students "...use of strategic and sophisticated learning strategies [including] active self-regulation" (p. 257). Students rate the items on a 5-point agreement scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*). Example items include "When doing schoolwork, I try to relate what I'm learning to what I already know" and "When I study, I try to connect what I am learning with my own experiences". Support for the reliability and validity is provided by Reeve and Tseng (2011).

Staff. Staff who support teaching and learning also completed the 6-item Meaningfulness subscale of the Psychological Engagement Scale (May, Gilson, & Harter, 2004) which examines "...the degree of meaning that individuals discovered in their work-related activities" (p. 21). Staff rate the items on a 5-point agreement scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*). Example items include "The work I do on this job is very important to me" and "My job activities are personally meaningful to me". Reeve and Tseng (2011) provide some support for the reliability and validity is provided by May and colleagues (2004).

Procedure

The research was submitted to and approved by each institution's Human Research Ethics Board. The three institutions used standard survey templates developed by the research team in the survey software Qualtrics, but included personalized landing pages for the surveys (i.e. university logo, letters of information) and institution-specific response options for some demographic items (see the description of the demographic items above). The online surveys were conducted in late winter and early spring 2018 (see Table 7 for specific timelines). At the end of the online surveys, some of the participant groups were provided with the opportunity to participate in a draw for prizes. Specifically, at two of the institutions all the three participant groups (i.e., faculty, students, and staff) were eligible for the draws whereas at one institution only students were eligible for a draw. The nature, number, and value of the prizes varied across institutions and, for one institution across participant group, but included \$400 VISA gift cards, \$400 gift cards to a local mall, \$250 Amazon.ca gift cards, and Echo Plus with built-in Smart Home Hub from Amazon.ca.

Table 7
Recruitment Information by Institution for Each Participant Group

Participant Group by Institution	Number of Email	Dates of Surveys	Unit(s) Sending the E-mails
Brock			
Faculty	3	March 5-April 2	Human Resources/Institutional Analysis
Undergraduate	3		
Graduate	3		
Staff	3		
Western			
Faculty	2	March 13-April 9	Communications & Public Affairs/Human Resources
Undergraduate	3	March 8-April 7	Office of the Registrar
Graduate	3	March 8-April 7	Office of the Registrar
Staff	3	March 7-April 12	Office of the Vice-Provost (Academic Programs), Office of the Associate Vice-President (Student Experience), Office of the Registrar
Windsor			
Faculty	3	March 1-March 28 February 28-March 28	Human Resources
Undergraduate	3	February 28-March 28	Director, Teaching and Learning Development / Institutional Analysis
Graduate	3	February 28-March 28	Director, Teaching and Learning Development
Staff	3	March 2-March 28	Director, Teaching and Learning Development / Human Resources

The primary recruitment method for all institutions and participants groups was an invitation e-mail and up to two email reminders sent to the participants' institutional e-mail addresses (see Table 7 for the number of e-mails, timeframe of survey administration, and the unit(s) primarily responsible for sending the e-mails). Two institutions had an online news story advertising the surveys, one of which also advertised via posters, social media posts, and a posting on the university's online special events calendar.

The sampling frame varied somewhat between the three institutions, particularly for staff who support teaching and learning. For undergraduate students, Brock and Windsor invited a random selection of roughly 5,000 students registered in the winter 2018 term, whereas Western invited a random selection of roughly 10,000 students (see Table 1 for the number of possible participants invited). For graduate students, all three institutions invited all graduate students registered at the universities in winter 2018. Similarly, all three institutions invited all faculty members teaching at least one course in the winter 2018 term. For staff who support teaching and learning, Western invited 129 staff members, employing a narrow definition that included academic counsellors and staff in units such as the Centre for Teaching and Learning, Student Development Centre, and Student Success Centre. Brock and Windsor employed more broad operational definitions of staff who support teaching and learning. For example, Brock invited

634 staff including those addressed above as well as units such as Human Rights and Equity Services, Office of Research Services, and Administrative Assistants in the Departments and Faculties. These differences in the sampling frame for staff who support teaching and learning are important to highlight as they may influence the results.

Data Analysis Plan

Three primary analyses were performed for this report: Cronbach's Alphas for the proposed ITCPS levers and validation scales, descriptive statistics for these measures, and correlations between the agreement and importance ratings of the ITCPS levers and the validation scales. The correlations will be interpreted in light of Cohen's (1992) guidelines concerning effect sizes for correlations. Specifically, correlations of .10, .30, and .50 will be interpreted as small, medium, and large effects, respectively.

Results

Faculty

Cronbach's Alpha. All of the six levers of the faculty version of the ITCPS evidenced good to excellent Cronbach's Alphas for both the agreement and importance ratings (α 's = .70 to .89) as did the two validation measures, the Conceptual Change/Student Focus subscale of the Revised Approaches to Teaching Inventory (ATI-CC/SF, Trigwell, Prosser, & Ginns, 2005) and the Learning subscale of the Students' Evaluations of Educational Quality (SEEQ-Learning; Marsh, 1982; see Table 8).

Descriptive statistics. The mean agreement ratings for the six levers ranged from 2.88 to 3.21 on the 5-point agreement scale indicating that they moderately agreed that their institutions evidenced the indicators of a culture that values teaching (see Table 8). Faculty's importance ratings for the six levers were almost one full point above their agreement scores, with mean ratings ranging from 3.75 to 4.13. Faculty believed that it was highly important that these indicators of a culture that values teaching be evident at their institutions.

Table 8
Number of Participants, Number of Items, Cronbach's Alphas, Means, and Standard Deviations for the ITCPS Agreement and Importance Subscales and Validation Measures for Faculty

	<i>n</i> ¹	# of items	α	Mean	Std. Deviation
Agreement Subscales²					
Institutional initiatives prioritize effective teaching	400	6	.84	3.21	0.816
Assessment of teaching is constructive	352	6	.70	2.88	0.744
Effective teaching is implemented	312	7	.85	2.92	0.770
Infrastructure supports teaching	390	5	.84	3.11	0.874
Broad engagement occurs around teaching	230	7	.85	2.88	0.824
Effective teaching is rewarded	332	6	.83	2.94	0.829
Importance Subscales²					
Institutional initiatives prioritize effective teaching	384	6	.87	4.13	0.703
Assessment of teaching is constructive	368	6	.82	3.82	0.734
Effective teaching is implemented	365	7	.89	3.89	0.741
Infrastructure supports teaching	385	5	.86	4.09	0.679
Broad engagement occurs around teaching	321	7	.89	3.75	0.770
Effective teaching is rewarded	354	6	.89	3.89	0.733
Validation Scales³					
ATI-CC/SF	384	11	.85	4.08	0.672
SEEQ-Learning	375	4	.81	4.00	0.679

Note. ¹Number of participants varied due to missing data. ²The ITCPS items are rated on a 5-point scale twice, for agreement (1 = *Very Low Agreement* to 5= *Very High Agreement*) and importance (1 = *Very Low Importance* to 5= *Very High Importance*). ³The ATI-CC/SF and SEEQ-Learning both rated on 5-point scales as well with the ATI being rated from *Only Rarely True of Me* (1) to *Almost Always True of Me* (5) and the SEEQ from *Strongly Disagree* (1) to *Strongly Agree* (5).

Correlations. Faculty's importance ratings were significantly and positively correlated with their ratings on the student focus subscale of the ATI indicating that the more student focused faculty were, the more they believed that it was important that their institutions had a culture that valued teaching (see Table 9). These correlations represent a medium effect size (Cohen, 1992). The relationship between the ATI and faculty's agreement ratings was negligible indicating that their perception of their institutions' actual teaching culture was not related to their student focused approach to teaching.

Both Faculty's agreement and importance ratings were significantly and positively correlated with their ratings on the learning subscale of the SEEQ, indicating that the more faculty believe that students learn at their institutions the more they agree, and feel it is important, that their institutional culture values teaching. Although the correlations with the SEEQ were significant for both the agreement and importance ratings, the effect size for the

importance scale were small to moderate whereas they were moderate for the agreement ratings (Cohen, 1992).

Undergraduate Students

Cronbach's Alpha. For undergraduate students, all of the six levers of the student version of the ITCPS evidenced good to excellent Cronbach's Alphas for both the agreement and importance ratings (α 's = .82 to .89; see Table 10). The two validation measures, the Cognitive Engagement subscale of the Student Engagement Questionnaire (SEQ-CE; Reeve & Tseng, 2011) and the Learning subscale of the Students' Evaluations of Educational Quality (SEEQ-Learning; Marsh, 1982), also evidenced good to excellent internal consistency reliability (α 's = .74 and .80, respectively).

Table 9

Correlations between the ITCPS and Validation Subscales for Faculty

	ATI-CC/SF		SEEQ-Learning	
	<i>n</i>	<i>r</i>	<i>N</i>	<i>r</i>
Agreement Subscales				
Institutional initiatives prioritize effective teaching	323	0.02	321	.30**
Assessment of teaching is constructive	290	0.05	288	.32**
Effective teaching is implemented	265	0.09	272	.37**
Infrastructure supports teaching	328	-0.03	325	.32**
Broad engagement occurs around teaching	204	0.08	211	.32**
Effective teaching is rewarded	291	0.02	290	.21**
Importance Subscales				
Institutional initiatives prioritize effective teaching	311	.23**	305	.27**
Assessment of teaching is constructive	303	.28**	294	.19**
Effective teaching is implemented	309	.32**	295	.22**
Infrastructure supports teaching	323	.26**	312	.16**
Broad engagement occurs around teaching	282	.30**	273	.18**
Effective teaching is rewarded	313	.25**	300	.24**

Note. ** indicates significant at $p < .01$.

Descriptive statistics. The mean agreement ratings for undergraduate students ranged from 3.11 to 3.58 on the 5-point agreement scale indicating that they moderately agreed that their institutions evidenced the indicators of a culture that values teaching (see Table 9). Their importance ratings for the six levers were substantially higher than their agreement scores, with mean ratings ranging from 3.78 to 4.18. Undergraduate students believed that it was highly important that these indicators be evident at their institutions.

Table 10

Number of Participants, Number of Items, Cronbach's Alphas, Means, and Standard Deviations for the ITCPS Agreement and Importance Subscales and Validation Scales for Undergraduate Students

	n^1	# of items	α	Mean	Std. Deviation
Agreement Subscales²					
Institutional initiatives prioritize effective teaching	1081	5	.88	3.44	0.855
Assessment of teaching is constructive	852	5	.82	3.21	0.964
Effective teaching is implemented	1341	6	.86	3.11	0.844
Infrastructure supports teaching	1130	5	.85	3.58	0.800
Broad engagement occurs around teaching	661	6	.89	3.34	0.881
Effective teaching is rewarded	612	4	.88	3.45	0.943
Importance Subscales²					
Institutional initiatives prioritize effective teaching	1196	5	.82	4.16	0.668
Assessment of teaching is constructive	1174	5	.82	4.18	0.665
Effective teaching is implemented	1193	6	.84	3.98	0.661
Infrastructure supports teaching	1175	5	.86	4.13	0.670
Broad engagement occurs around teaching	962	6	.87	3.78	0.726
Effective teaching is rewarded	1012	4	.82	3.94	0.755
Validation Scales³					
SEQ-CE	1300	8	.74	4.03	0.551
SEQ-Learning	1266	4	.80	3.86	0.731

Note. ¹Number of participants varied due to missing data. ²The ITCPS items are rated on a 5-point scale twice, for agreement (1 = *Very Low Agreement* to 5= *Very High Agreement*) and importance (1 = *Very Low Importance* to 5= *Very High Importance*). ³The SEQ-CE and SEQ-Learning are both rated on a 5-point scales agreement scale (*Strongly Disagree* = 1 to *Strongly Agree* = 5).

Correlations. Undergraduate students' agreement and importance ratings were both significantly and positively correlated with their ratings on the cognitive engagement subscale of the SEQ, indicating that the more engaged they were in their learning, the more they agreed, and believed that it was important, that their institutions had a culture that valued teaching (see Table 11). The effect size for both the correlations between the SEQ and agreement and importance scale were small to moderate (Cohen, 1992).

Similarly, both undergraduate students' agreement and importance ratings were significantly and positively correlated with their ratings on the learning subscale of the SEQ, indicating that they believe that the more students learn at their institutions, the more they agree, and feel it is important, that their institutional culture values teaching. Although the correlations with the SEQ were significant for both the agreement and importance ratings, the effect size for the agreement scale were large whereas they were small to moderate for the importance ratings

(Cohen, 1992). That is, undergraduate students' perception of the actual teaching culture was more strongly related to their perceptions of students' learning than the importance they place on their institution valuing teaching.

Table 11

Correlations between the ITCPS and Validation Subscales for Undergraduate Students

	SEQ-CE		SEEQ-Learning	
	<i>n</i>	<i>R</i>	<i>n</i>	<i>r</i>
Agreement Subscales				
Institutional initiatives prioritize effective teaching	869	.19**	853	.52**
Assessment of teaching is constructive	724	.17**	726	.46**
Effective teaching is implemented	1181	.18**	1144	.51**
Infrastructure supports teaching	1016	.16**	996	.41**
Broad engagement occurs around teaching	603	.26**	611	.49**
Effective teaching is rewarded	567	.21**	573	.48**
Importance Subscales				
Institutional initiatives prioritize effective teaching	972	.21**	945	.18**
Assessment of teaching is constructive	1011	.20**	976	.02
Effective teaching is implemented	1061	.27**	1026	.12**
Infrastructure supports teaching	1063	.26**	1024	.19**
Broad engagement occurs around teaching	880	.30**	866	.16**
Effective teaching is rewarded	946	.28**	925	.18**

Note. ** indicates significant at $p < .01$.

Graduate Students

Cronbach's Alpha. For graduate students, all of the six levers of the student ITCPS evidenced excellent Cronbach's Alphas for both the agreement and importance ratings (α 's = .85 to .92; see Table 12). The two validation measures, the SEQ-CE (Reeve & Tseng, 2011) and the SEEQ-Learning (Marsh, 1982), also evidenced excellent internal consistency (α 's = .80 and .84, respectively).

Descriptive statistics. The mean agreement ratings for graduate students ranged from 3.16 to 3.51 on the 5-point agreement scale indicating that they moderately agreed that their institutions evidenced the indicators of a culture that values teaching (see Table 12). Their importance ratings for the six levers were substantially higher than their agreement scores, with mean ratings ranging from 3.93 to 4.21. Graduate students believed that it was highly important that these indicators be evident at their institutions.

Table 12

Number of Participants, Number of Items, Cronbach's Alphas, Means, and Standard Deviations for the ITCPS Agreement and Importance Subscales and Validation Measures for Graduate Students

	<i>n</i> ¹	# of items	α	Mean	Std. Deviation
Agreement Subscales²					
Institutional initiatives prioritize effective teaching	819	5	.91	3.38	1.023
Assessment of teaching is constructive	675	5	.86	3.19	1.090
Effective teaching is implemented	1078	6	.89	3.16	0.936
Infrastructure supports teaching	931	5	.88	3.51	0.897
Broad engagement occurs around teaching	565	6	.92	3.28	0.989
Effective teaching is rewarded	565	4	.89	3.39	1.032
Importance Subscales²					
Institutional initiatives prioritize effective teaching	942	5	.86	4.21	0.726
Assessment of teaching is constructive	943	5	.87	4.15	0.747
Effective teaching is implemented	966	6	.88	4.07	0.730
Infrastructure supports teaching	970	5	.87	4.20	0.687
Broad engagement occurs around teaching	820	6	.88	3.93	0.719
Effective teaching is rewarded	855	4	.85	4.11	0.737
Validation Scales³					
SEQ-CE	1045	8	.80	4.16	0.586
SEEQ-Learning	1041	4	.84	3.82	0.781

Note. ¹Number of participants varied due to missing data. ²The ITCPS items are rated on a 5-point scale twice, for agreement (1 = *Very Low Agreement* to 5= *Very High Agreement*) and importance (1 = *Very Low Importance* to 5= *Very High Importance*). ³The ATI-CC/SF and SEEQ-Learning both rated on 5-point scales as well with the ATI being rated from *Only Rarely True of Me* (1) to *Almost Always True of Me* (5) and the SEEQ from *Strongly Disagree* (1) to *Strongly Agree* (5).

Correlations. As with undergraduate students, graduate students' agreement and importance ratings were both significantly and positively correlated with their ratings on the cognitive engagement subscale of the SEQ, indicating that the more engaged they were in their learning the more they agreed, and believed that it was important, that their institutions had a culture that valued teaching (see Table 13). The effect size for these correlations were small to moderate (Cohen, 1992).

Similarly, graduate students' agreement and importance ratings were significantly and positively correlated with their ratings on the learning subscale of the SEEQ, indicating that they believe that the more students learn at their institutions the more they agree, and feel it is important, that their institutional culture values teaching. Although the correlations with the

SEQ were significant for both sets of ratings, the effect size for the agreement scale were large whereas they were small to moderate for the importance ratings (Cohen, 1992). Thus, graduate students' perception of the actual teaching culture was more strongly related to their perceptions of students' learning than the importance they place on the institution valuing teaching.

Table 13

Correlations between the Graduate Student ITCPS Subscales and the Validation Subscales

	SEQ-CE		SEQ-Learning	
	<i>n</i>	<i>r</i>	<i>n</i>	<i>r</i>
Agreement Subscales				
Institutional initiatives prioritize effective teaching	661	.30**	664	.59**
Assessment of teaching is constructive	570	.26**	575	.50**
Effective teaching is implemented	921	.27**	913	.56**
Infrastructure supports teaching	805	.24**	820	.48**
Broad engagement occurs around teaching	510	.29**	527	.61**
Effective teaching is rewarded	517	.29**	533	.59**
Importance Subscales				
Institutional initiatives prioritize effective teaching	759	.30**	754	.18**
Assessment of teaching is constructive	789	.28**	776	.16**
Effective teaching is implemented	828	.38**	819	.22**
Infrastructure supports teaching	845	.27**	837	.25**
Broad engagement occurs around teaching	739	.35**	731	.26**
Effective teaching is rewarded	780	.30**	768	.21**

Note. ** indicates significant at $p < .01$

Staff who Support Teaching and Learning

Cronbach's Alpha. For staff who support teaching and learning, the six levers of the staff ITCPS evidenced good to excellent Cronbach's Alphas for the agreement and importance ratings (α 's = .70 to .80). The two validation measures, the Meaningfulness subscale of the Psychological Engagement Scale (PES-M; May, Gilson, & Harter, 2004) and the Learning subscale of the Students' Evaluations of Educational Quality (Marsh, 1982), also evidenced excellent internal consistency (α 's = .96 and .82, respectively).

Descriptive statistics. The mean agreement ratings for staff ranged from 2.76 to 3.32 on the 5-point agreement scale indicating that they moderately agreed that their institutions evidenced the indicators of a culture that values teaching (see Table 14). Their importance ratings for the six levers were roughly one point higher than their agreement scores, with mean ratings ranging from 4.05 to 4.48. As with all participant groups, staff believed that it was highly important that these indicators be evident at their institutions.

Table 14
Number of Participants, Number of Items, Cronbach's Alphas, Means, and Standard Deviations for the Staff ITCPS Subscales

	<i>n</i> ¹	# of items	α	Mean	Std. Deviation
Agreement Subscales					
Institutional initiatives prioritize effective teaching	85	6	.88	3.32	0.853
Assessment of teaching is constructive	55	4	.77	2.76	0.938
Effective teaching is implemented	56	6	.85	3.02	0.779
Infrastructure supports teaching	65	6	.71	3.41	0.617
Broad engagement occurs around teaching	50	6	.79	3.05	0.755
Effective teaching is rewarded	44	5	.83	2.98	0.808
Importance Subscales					
Institutional initiatives prioritize effective teaching	111	6	.80	4.48	0.456
Assessment of teaching is constructive	112	4	.70	4.05	0.576
Effective teaching is implemented	110	6	.80	4.31	0.472
Infrastructure supports teaching	113	6	.86	4.35	0.483
Broad engagement occurs around teaching	111	6	.79	4.08	0.519
Effective teaching is rewarded	100	5	.82	4.09	0.570
Validation Scales					
PES-M	119	6	.96	4.61	0.754
SEEQ-Learning	98	4	.82	3.97	0.584

Note. ¹Number of participants varied due to missing data. ²The ITCPS items are rated on a 5-point scale twice, for agreement (1 = *Very Low Agreement* to 5= *Very High Agreement*) and importance (1 = *Very Low Importance* to 5= *Very High Importance*). ³The PES-M and SEEQ-Learning are both rated on a 5-point agreement scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (5).

Correlations. Contrary to prediction, for staff the agreement and importance ratings were not significantly correlated with their ratings on the meaningfulness subscale of the PES (see Table 15). Although non-significant, a number of the correlations reach the level of a small effect size as outlined by Cohen (1992). That said four of the smallest of the 12 correlations are negative. There appears to be small and inconsistent relationships between the meaning that the participants' work has for them and their perception of the value that the culture places on teaching and the importance they believe that value on teaching to be.

Staff's agreement ratings were significantly and positively correlated with their ratings on the learning subscale of the SEEQ with moderate to large effect sizes (Cohen, 1992). The more students learn at their institutions, the more they agree that their institutional culture values teaching. The relationship between their SEEQ and importance ratings was negligible indicating that the amount they feel that students learn at their institution is not related to the importance they place on their institution valuing teaching.

Table 15
Correlations between the Staff ITCPS Subscales and the Validation Measures

	PES-M		SEEQ-Learning	
	<i>n</i>	<i>r</i>	<i>n</i>	<i>r</i>
Agreement Subscales				
Institutional initiatives prioritize effective teaching	76	.12	66	.47**
Assessment of teaching is constructive	51	.11	45	.35*
Effective teaching is implemented	51	.15	48	.46**
Infrastructure supports teaching	59	-.01	55	.29*
Broad engagement occurs around teaching	46	.12	42	.43**
Effective teaching is rewarded	42	.19	39	.38*
Importance Subscales				
Institutional initiatives prioritize effective teaching	102	-.02	82	-.16
Assessment of teaching is constructive	104	-.12	86	-.07
Effective teaching is implemented	102	.07	87	-.06
Infrastructure supports teaching	106	.15	89	.01
Broad engagement occurs around teaching	104	.14	87	-.07
Effective teaching is rewarded	97	-.06	79	-.06

Note. * indicates significant at $p < .05$ and ** indicates significant at $p < .01$

Discussion

Given the direct impact that institutional teaching culture has on students, faculty and staff, it is important to understand, from their perspective, how teaching is supported, evaluated, implemented, enhanced and awarded at their institution through the ITCPS. The ITCPS is unique, in that it allows participants to identify not only whether they perceive something is present within their institution using the agreement scale, but also to rate how important it is. Through this multi-scale framework, all participant groups in the current research rated the six levers considerably higher on importance than their agreement scores, suggesting that, in fact, these six levers are important for institutional consideration around teaching and learning, but they might not be happening at the level the participants expect. This agreement-importance discrepancy can be one source of information for institutions interested in making changes to their teaching culture. Although not highlighted in this preliminary analysis, an institution could examine the scores at the item level for further guidance on what was rated the lowest and in turn, what is the first priority for improvement.

Preliminary Evidence toward Validity

The six levers that make up the ITCPS were initially developed adapted from the framework of Hénard & Roseveare(2012), with a strong theoretical background, recognizing that each lever, independently and together as a whole, has an impact on how teaching is viewed within an institution. Each lever had good to excellent internal consistency across all four participant groups, supporting the reliability of the surveys. Similarly, the validation scales support the convergent validity of the ITCPS levers, particularly for the faculty and student versions, as the

lever scores are generally significant and positively related to those theoretically related constructs.

Limitations

Culture is a complex variable that is made up of several interconnected microcultures that are constantly changing and adapting based on the makeup of staff, students, faculty and administration. Although the results do suggest that there is preliminary evidence of survey validity, further analysis need to be conducted to understand the ITCPS so that institutional teaching culture can be better understood, evaluated and eventually, improved upon. Furthermore, each institution slightly differed in their sampling criteria for staff that support teaching, limiting the sample size and potentially impacting the results.

Next Steps for ITCPS

The research team is currently working on an effective practices repository, which will host effective practices that are being implemented by institutions across Canada. Decision makers can use this as a tool to find feasible practices that would work in their institution and possibly enhance the areas of improvement identified by the ITCPS results. For instance, if an institution found that the item-level means were lowest for Assessment of Teaching is Constructive and Flexible (Lever 2), they could implement a new teaching evaluation framework, similar to one successfully implemented at a neighbouring. As such, this repository can help facilitate a national knowledge exchange around teaching culture, mobilizing institutions to make a greater impact around teaching, in turn influencing student success (Cox, McIntosh, Reason, & Terenzini, 2011), engagement (Grayson & Grayson, 2003) and retention (Berger & Braxton, 1998), faculty motivation and commitment (Feldman & Paulsen, 1999), and staff productivity and well-being (Harter, Schmidt & Keyes, 2003; Lok & Crawford, 2004).

The results of the current phase of the ITCPS, give the participating institutions a snapshot of their current culture around teaching. Using this as a benchmark, the institutions can run the survey in a few years and determine whether any cultural shifts occurred and where exactly those shifts happened, using item-level analysis. With that, decision makers can identify the contributions that new programs, new administration or new policies made to the institutional teaching culture.

References

- Berger, J. B., & Braxton, J. M. (1998). Revising Tinto's interactionalist theory of student departure through theory elaboration: Examining the role of organizational attributes in the persistence process. *Research in Higher education*, 39(2), 103-119.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159.
<http://doi.org/10.1037/0033-2909.112.1.155>
- Cox, B. E., McIntosh, K.L., Reason, R. D., & Terenzini, P. T. (2011). A culture of teaching: Policy, perception, and practice in Higher Education. *Research in Higher education*, 52, 808-829.

- Feldman, K. A., & Paulsen, M. B. (1999). Faculty motivation: The role of a supportive teaching culture. *New directions for teaching and learning*, 1999(78), 69-78.
- Finkelstein, A., Ferris, J. Weston, C., & Winer, L. (2016). Research-informed principles for (re)designing teaching and learning spaces. *Journal of Learning Spaces*, 5(1), 26-40. Retrieved from <http://libjournal.uncg.edu/jls/article/view/1213/909>
- Gibbs, G., Habeshaw, T., & Yorke, M. (2000). Institutional learning and teaching strategies in English higher education. *Higher Education*, 40, 351-372. <https://doi.org/10.1023/A:1004148310182>
- Gibbs, G., Knapper, C., & Piccinin, S. (2008). Disciplinary and contextually appropriate approaches to leadership of teaching in research-intensive academic departments in higher education. *Higher Education Quarterly*, 62(4), 416-436. <https://doi.org/10.1111/j.1468-2273.2008.00402.x>
- Grayson, J.P., & Grayson, K., (2003). *Research on retention and attrition (No.6)*. Montreal QC: The Canadian Millennium Scholarship Foundation.
- Harter, J.K., Schmidt, F.L., & Keyes, C. L. (2003). Well-being in the workplace and its relationship to business outcomes: A review of the Gallup studies. In C.L.M. Keyes & J. Haidt (Eds.), *Flourishing: The positive person and the good life* (pp. 205–224).
- Hénard, F. & Roseveare, D. (2012). *Fostering quality teaching in higher education: Policies and practices*. France: Organization for Economic Co-operation and Development.
- Jamieson, P. (2003). Designing more effective on-campus teaching and learning spaces: A role for academic developers. *The International Journal for Academic Development*, 8(1), 119-133.
- Lok, P., & Crawford, J. (2004). The effect of organisational culture and leadership style on job satisfaction and organisational commitment: A cross-national comparison. *Journal of Management Development*, 23(4), 321-338. <https://doi.org/10.1108/02621710410529785>
- Marsh, H. W. (1982). SEEQ: A reliable, valid, and useful instrument for collecting students' evaluations of university teaching. *British journal of educational psychology*, 52(1), 77-95. <https://doi.org/10.1111/j.2044-8279.1982.tb02505.x>
- May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of occupational and organizational psychology*, 77(1), 11-37. <https://doi.org/10.1348/096317904322915892>
- Miller-Young, J.E., Anderson, C., Kiceniuk, D., Mooney, J....Chick, N. (2017). Leading up in the scholarship of teaching and learning. *The Canadian Journal for the Scholarship of Teaching and Learning*, 8(2). <https://doi.org/10.5206/cjsotl-rcacea.2017.2.4>
- Prosser, M., & Trigwell, K. (2006). Confirmatory factor analysis of the Approaches to Teaching Inventory. *British Journal of Educational Psychology*, 76, 405-419. <http://doi.org/10.1348/000709905X43571>
- Reeve, J., & Tseng, C. M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology*, 36(4), 257-267. <https://doi.org/10.1016/j.cedpsych.2011.05.002>
- Stensaker, B (2018). Academic development as cultural work: responding to the organizational complexity of modern higher education institutions. *International Journal for Academic Development*, 23(4), 274-285.

- Trigwell, K., & Prosser, M. (2004). Development and use of the Approaches to Teaching Inventory. *Educational Psychology Review*, *16*, 409–425. <https://doi.org/10.1007/s10648-004-0007-9>
- Trigwell, K., Prosser, M., & Ginns, P. (2005). Phenomenographic pedagogy and a revised Approaches to Teaching Inventory. *Higher Education Research & Development*, *24*(4), 349-360. <https://doi.org/10.1080/07294360500284730>
- Trigwell, K., Prosser, M., & Waterhouse, F. (1999). Relations between teachers' approaches to teaching and students' approaches to learning. *Higher Education*, *37*, 57– 70. <https://doi.org/10.1023/A:1003548313194>