DECODING THE IB TEACHER PROFESSIONAL: A COMPARATIVE STUDY OF AUSTRALIA, CANADA, CHINA, DENMARK, SOUTH KOREA, TAIWAN, TURKEY, AND THE UNITED STATES

MOOSUNG LEE
YOUNGMIN MO
EWAN WRIGHT
WARANGKANA LIN
JIN WON KIM
MEHMET SUKRU BELLIBAS
BEN FAIGEN
SEDAT GUMUS
JI HOON RYOO
PAUL TARC

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Corresponding researcher:
Moosung Lee, Ph.D.
Professor
University of Canberra & Yonsei University
Email: leemoosung@gmail.com

GLOSSARY

ANOVA	Analysis of Variance
IB	International Baccalaureate
CAS	Creativity, Activity, Service
CP	Career-related Programme
CVR	Content Validity Ratio
DP	Diploma Programme
EE	Extended Essay
HLM	Hierarchical Linear Modeling
MYP	Middle Years Programme
OECD	Organization for Economic Co-operation and Development
PLC	Professional Learning Community
PYP	Primary Years Programme
TALIS	Teaching and Learning International Survey
TOK	Theory of Knowledge

EXECUTIVE SUMMARY

CONTENTS

1. OVERVIEW OF THE RESEARCH

Currently, there are 5,475 schools around the world authorized to offer IB programmes. Despite the fast growth of IB schools over the last two decades, empirical studies exploring the professional characteristics of IB teachers are scarce. The objective of this project was to decode the IB teacher professional by identifying the characteristics of IB teachers and how they compare with non-IB teachers. In accordance with the four quadrants in our conceptual framework (Figure 1), we compared IB teachers to non-IB teachers who responded to the Teaching and Learning International Survey (TALIS) in 2018.[1] We used items from the TALIS instrument administered in 2018 to collect data from IB teachers in 2019-2020, comparing their data to non-IB teachers in the same jurisdictions. We also created additional items specifically designed to compare professional characteristics among IB teachers (i.e., IB-specific teaching collaboration). The study's main constructs included:

- demographic and workforce characteristics, psychological characteristics (e.g., motivation, work-related stress, self-efficacy, and job satisfaction),
- pedagogical practices (e.g., time use, professional development, autonomy, and assessment),
- school-level professional characteristics (e.g., practices for promoting diversity, professional learning communities [PLCs], institutional support, and school climate)

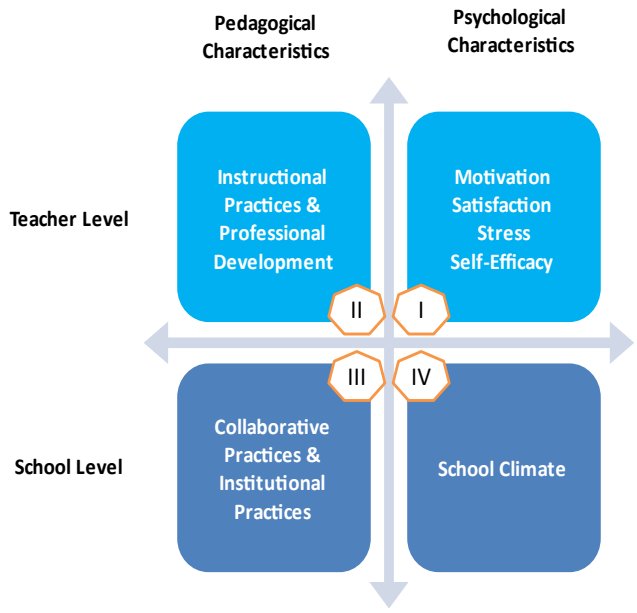

Figure 1. A Conceptual Framework for the IB Teacher Professional[2]

[1] Administered by the Organization for Economic Co-operation and Development (OECD), TALIS is a large-scale international survey that asks teachers and school leaders about their working conditions and learning environments, providing a barometer of the profession every five years.

[2] Figure 1 is reconstructed from the Teaching and Learning International Survey (TALIS) 2018 (Ainley & Carstens, 2018).

For our study, we selected eight jurisdictions that had teacher participation in TALIS 2018 and numerous IB programmes: Australia (Australia Capital Territory & Victoria), Canada (Alberta), China (Shanghai), Denmark, South Korea, Taiwan, Turkey, and the United States (California). The selected jurisdictions present societies with socio-cultural and linguistic diversity (e.g., Anglo-Saxon, Scandinavian, Confucian, and straddling between Eastern Europe and Asia). For our comparative approaches, we used the analytical domains illustrated in Figure 2.

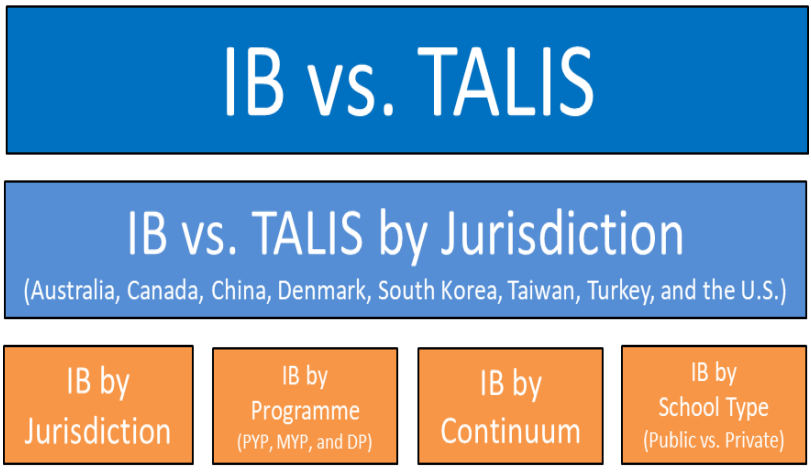

Figure 2. Analytical Domains

We employed a two-phase quantitative study, the phases of which were analytically separate but conceptually integrated: Phase One – Survey Development and Pilot Study and Phase Two – Main Study. First, we conducted a pilot study to test the content validity of our survey questionnaire in an IB school context before proceeding to the main study. Explicitly, we developed IB-specific survey questions to evaluate content validity based upon responses from 110 IB teachers in one IB continuum school (i.e., a K-12 continuum of IB programmes of education covering the Primary Years [PYP], Middle Years [MYP], and Diploma Programmes [DP])[3], in East Asia. The survey questions addressed the following content domains of IB teachers' professional characteristics: reasons for becoming an IB teacher, professional development, professional collaboration, benefits from IB teaching, IB teacher profile, and IB-specific teaching and learning. We tested the content validity of the items with multiple methods, including Lawshe's content validity ratio (CVR) and Aiken's V coefficient. Overall, the combined results of CVR and Aiken's V coefficients showed good content validity.[4]

Our main study gathered online survey data from 1,179 IB teachers from 173 schools in the eight jurisdictions. Approximately one-third of all the IB schools in those jurisdictions participated in our study. A majority of IB schools in our sample offered a single programme (128 schools, 74%). Slightly more than half of the IB schools were public schools (90 schools, 52%), and 83 were private schools. We distinguished between two types of private schools: private-national schools that offer IB programmes to the local population in the host society's language and private-international schools that primarily

[3] Note that some of our sample schools also offered the Career-related Programme (CP), which is a recently developed IB curriculum framework for students aged 16 to 19 who wish to engage in career-related studies.
[4] Details about content validity are available upon request to the project leader.

cater to globally mobile families and instruct in English or other languages that are foreign to the host country. Most private-international schools were from non-English majority countries. Additionally, to compare IB and non-IB teachers, we extracted TALIS 2018 survey data from the same jurisdictions, including 53,338 non-IB teachers from 3,165 non-IB schools. Our analytical strategies included descriptive analysis, group comparisons (*t*-tests, chi-square analyses, analyses of variance (ANOVA), and latent mean analyses), and hierarchical linear modelling (HLM).[5]

[5] *t*-tests are used to determine differences in means between two groups. Chi-square tests are used to compare the proportional distributions of certain properties/characteristics between groups. Analyses of variance are used to determine differences in means for more than two groups. Latent mean analyses are used to measure group differences in means of certain constructs with multidimensional properties/characteristics (e.g., motivation, well-being). HLM is an extended form of regression analysis, estimating relations between independent variables and one or more dependent variables, that is used when data have a nested structure (e.g., students within schools).

2. SUMMARY OF KEY FINDINGS

2.1. Demographic and Workforce Characteristics: IB vs. TALIS

We first delved into the demographic and workforce characteristics of IB teachers compared to those of TALIS teachers. We have presented the key findings in Table 1.

Table 1. Demographic and Workforce Characteristics: IB vs. TALIS

Variables	IB vs. TALIS			Key Points
	IB	TALIS	*p value*	
Gender (% of female teachers)	68.70%	64.30%	**	• *Across the eight jurisdictions, females were the reported majority.*
Age (in years)	30 to 39 (37.40%)	40 to 49 (34.20%)	***	• *The largest reported age group among IB teachers was 30 to 39, whereas the largest reported age group among TALIS teachers was 40 to 49.* • *This pattern held across all eight jurisdictions.*
Educational Attainment (% of teachers holding master's and/or doctoral degrees)	56.40%	29.70%	***	• *IB teachers consistently reported higher levels of holding master's and/or doctoral degrees compared to TALIS counterparts. The majority of IB teachers reported holding master's degrees.* • *Conversely, most TALIS teachers reportedly held bachelor's degrees, a pattern observed in all jurisdictions except Taiwan.*
Study Abroad (% of 'yes' response)	66.80%	28.60%	***	• *IB teachers reported considerably more study-abroad experience than TALIS teachers did.* • *The most frequent channel IB teachers reported toward international experiences was "as a teacher by his/her own initiative" (48.90%), which occurred prior to in-service teacher professional development programs that a school or school district arranged (31.50%).*
Qualification Pathway (% of teachers choosing the path through concurrent teacher education)	40.30%	69.70%	***	• *IB teachers reportedly had diverse channels to become teachers, whereas the vast majority of TALIS teachers reported choosing a more traditional pathway to become teachers (i.e., concurrent teacher education).* • *A higher proportion of IB teachers reportedly were trained through consecutive teacher education, fast-track/specialized teacher education, education in another pedagogical profession, and subject-specific education only.* • *Differences between the IB and TALIS groups were most salient in China, South Korea, Turkey, and Taiwan, where traditional teacher education programs are centralized, regulated, and preferred by educational authorities.*

Teaching as a Career Choice	65.70%	69.80%	**	• *Teaching was less often the reported first career choice for IB teachers compared to TALIS teachers.* • *The same pattern existed in most jurisdictions, except for Australia, Canada, and the United States, where many IB schools are state-funded.*
Year(s) Working as a Teacher in Total	14.11	15.20	***	• *IB teachers reported fewer years of teaching experience than TALIS teachers.* • *While there was some variation, overall, IB teachers indicated relatively fewer years of working at the "current" school compared to TALIS counterparts. This pattern was most salient in China, Denmark, and Taiwan, where most IB schools are international schools.* • *However, IB teachers reportedly had more years of working experience in various other education roles and non-education roles.*
Year(s) Working as a Teacher at This School	6.59	7.88	***	
Year(s) Working in Other Education Roles, Not as a Teacher	2.80	1.15	***	
Year(s) Working in Other Non-Education Roles	4.03	2.33	***	

*Notes. ***p < .001, **p < .01, *p < .05. In tables that include these asterisks (*), the p value shows the significance of statistical differences in means between the two groups (e.g., IB vs. TALIS teachers). For example, ***p < .001 indicates a significant statistical difference in the means between groups, suggesting that the null hypothesis (i.e., there is no difference in means between groups) should be rejected. Put simply, the probability of mistakenly rejecting the null hypothesis is 0.001, producing a 99.9% chance that the analysis found a real difference between group means. Correspondingly, p values of .01 (99% chance) and .05 (95% chance) are still statistically significant but give slightly less confidence of finding a real difference.*

2.2. Psychological Characteristics: IB vs. TALIS

We explored teachers' psychological characteristics focusing on their perceptions of the teaching profession, including motivation to join the profession, work-related stress, self-efficacy in a multicultural classroom, and job satisfaction.[6] We have presented the key findings in Table 2.

[6] We defined "motivation to join the profession" as reasons for choosing teaching as a career. TALIS (OECD, 2019) measured motivation with two sub-dimensions: personal (four items; e.g., teaching for a steady career path) and social utility (three items; e.g., teaching for influencing the development of children and young people). Specifically, personal utility refers to the value and/or benefit (e.g., steady career pathway, job security, and stable income) which teachers think they can obtain from joining the teaching profession for their own sake. We measured the items with a 4-point rating scale (1 = not important at all, 4 = of high importance). "Work-related stress" refers to the level of stress among teachers in terms of workload (five items; e.g., having too much lesson preparation) and student behavior (three items; e.g., maintaining classroom discipline). We used a 4-point rating scale to measure the work-related stress level (1 = not at all, 4 = a lot). We defined "self-efficacy in a multicultural classroom" as teachers' beliefs in their capability to enact teaching practices related to culturally responsive teaching when teaching in a multicultural classroom (Bandura, 1997; Choi & Lee, 2020; Siwatu, 2007). We explored teachers' self-efficacy in a multicultural classroom setting using five items from the TALIS survey questionnaire (e.g., coping with the challenges of a multicultural classroom). We measured each question on a 4-point rating scale (1 = not at all, 4 = a lot). "Job satisfaction" represents the feeling teachers have about the teaching profession and their current work environment. The "job satisfaction with the profession" scale included four items (e.g., "The advantages of being a teacher outweigh the disadvantages."). We measured satisfaction with work environment using four items (e.g., "I enjoy working at this school."), all with a 4-point Likert-type scale (1 = strongly disagree, 4 = strongly agree). We reverse coded items with negative statements.

Table 2. Psychological Characteristics: IB vs. TALIS

Variables		IB vs. TALIS			Key Points
		IB	TALIS	*p value*	
Motivation to Join the Profession	Personal utility	3.01	3.15	***	• *IB teachers' reported personal utility motivation was lower than that of TALIS teachers across all programmes.*
	Social utility	3.46	3.47	-	• *Overall, there was no significant difference in reported social utility between IB and TALIS teachers.* • *However, IB teachers in the PYP and the MYP reported higher social utility motivation than their counterparts from the TALIS data. In contrast, IB teachers in the DP and the CP reported lower levels of social utility motivation than TALIS teachers reported.*
Work-Related Stress	Workload	2.25	2.06	***	• *IB teachers reported higher levels of workload stress than TALIS teachers did, but lower levels of student behavior stress.*
	Student behavior	1.83	1.98	***	
Self-Efficacy in a Multicultural Classroom		3.07	2.76	***	• *IB teachers reported higher levels of self-efficacy in multicultural classroom settings than TALIS teachers did. This pattern held across the eight jurisdictions.* • *A significant group difference existed across all programme or levels between IB and TALIS teachers (i.e., PYP vs. TALIS primary, MYP vs. TALIS junior secondary, DP/CP vs. TALIS senior secondary).* • *Variation in self-efficacy among IB teachers was relatively small compared to variation among TALIS teachers, suggesting that IB teachers consistently exercised multicultural practices in their classrooms despite any potential national and cultural differences.*
Job Satisfaction	Work environment	3.20	3.01	***	• *IB teachers reported more satisfaction with both their profession and current*

	The profession	3.33	2.97	***	*work environment than TALIS teachers did across the eight jurisdictions.*

*Notes. ***p < .001, **p < .01, *p < .05. "-" indicates no statistical difference between groups.*

While most of the findings in Table 2 were interesting to us, we pay special attention to an ambivalent finding from IB teachers – i.e., more work but more satisfaction. Compared to TALIS teachers, IB teachers reported higher satisfaction about the teaching profession and work environment, but higher stress about workload issues. The confluence of work-related stress and job satisfaction can be interpreted by IB teachers having higher job satisfaction, given that, in many contexts, they tend to teach more academically able students in content-engaging classes with professional development opportunities (see findings of IB teachers' active participation in professional development activities in the full report). At the same time, however, such working environments could come with extra stress (e.g., pressure or excessive expectation of high student achievement from parents or administrators) and workload issues (e.g., extra planning/administration).[7] This interpretation parallels previous research that IB teachers are generally satisfied with the design of the IB curriculum (Doherty & Shield, 2012), but are under stress in the operation of the IB programme (Culross & Tarver, 2007; Dickson et al., 2018; Halicioğlu, 2008).

2.3. Psychological Characteristics by Programme, Continuum, and School Type

We further explored teachers' psychological characteristics by programme, continuum status, and school type. We have presented the key findings in Table 3.

Table 3. Psychological Characteristics by Programme, Continuum, and School Type

Variables		Programme or Continuum	*p value*	School Type	*p value*
Motivation to Join the Profession	Personal utility	PYP < TALIS primary	***		
		MYP < TALIS junior secondary	**	Public > Private-national	**
		DP/CP < TALIS senior secondary	**	Public > Private-international	***
	Social utility	PYP > TALIS primary	***		
		MYP > TALIS junior secondary	**	Public > Private-national	**
		DP/CP < TALIS senior secondary	**	Public > Private-international	*

[7] In addition, our investigation of teachers' time use showed that IB teachers spent a larger proportion of class time on the non-core parts of classroom activities, such as administrative tasks. In fact, IB teachers are often required to take on extra administrative tasks, such as co-ordination of planning and assessment and participating in schools' responses to IB's accreditation cycle.

Work-Related Stress	Workload	Continuum > One or two IB programmes	*	Public > Private-national, Private-international	**
	Student behavior	Continuum > One or two IB programmes	*	Public > Private-national, Private-international	*
Self-Efficacy in a Multicultural Classroom		PYP > TALIS primary MYP > TALIS junior secondary DP/CP > TALIS senior secondary	*** *** ***	-	-
Job Satisfaction	Work environment	Two IB programmes > One IB programme or Continuum	***	Public > Private-national, Private-international	***
	The profession	Two IB programmes > One IB programme or Continuum	**	Public > Private-national, Private-international	*

*Notes. ***p < .001, **p < .01, *p < .05. "-" indicates no statistical difference between groups*

We wish to further discuss some of the findings in Table 3 since they were somewhat unexpected.

- IB teachers in public schools indicated a higher level of job satisfaction, and especially satisfaction with the work environment, compared to their fellow teachers in private-national or private-international schools. We speculate that this finding might relate to IB teachers in public schools having higher personal and social utility motivation to join the teaching profession, which could offset their higher work-related stress. Another plausible explanation would be that IB teachers in private-international schools might feel more pressure due to high expectations regarding student academic performance (e.g., admission to top universities) and diverse parental expectations (Blandford & Shaw, 2001; Wright & Lee, 2014), although many enjoy well-resourced working environments and higher salaries.
- IB teachers in continuum schools (i.e., offering PYP, MYP, and DP) reported a higher level of work-related stress than counterparts in schools offering one or two IB programmes. We note that teachers in continuum schools are often required to align their teaching to the adjacent programme(s) to ensure programmatic articulation, continuity, and transition for student learning (Hallinger et al., 2010). Despite the conceptual coherence of the three IB programmes, in terms of their pedagogical approaches centered on the big idea (concepts), inquiry, and reflection, the requirements to establish coherence among the three programmes, such as teaching preparation, unit planning, and assessment design, are somewhat discrete (Hallinger et al., 2010; Walker & Lee, 2018). As a result, teachers often put more time and effort into aligning their teaching plan with the adjacent programme(s) in the form of cross-programme collaboration (Lee et al., 2012). In addition, in small and medium-sized schools with continuum programmes, teachers often teach across programmes (e.g., MYP and DP). As the pedagogical practices and assessment of MYP and DP differ somewhat (Hallinger et al., 2010), teachers need

to spend more time to become familiar with various formats of unit planning and to design assessment tasks for both MYP and DP. Furthermore, teachers involved in both MYP and DP are often required to attend subject meetings in each programme or MYP-DP collaborative meetings. In this regard, cross-programme teachers collaborate with teachers both vertically and horizontally in their schools. While these structural features offer opportunities for being a part of a PLC (Lee et al., 2012; Lin et al., 2018), our findings suggest that it can also impose more workload stress.

2.4. Perceptions of the Teaching Profession in the IB-Specific Context

We explored IB teachers' perceptions of the teaching profession in the IB-specific context with a focus on "major benefits from IB teaching" and our conceptualization of an "IB Teacher Profile."

- In terms of major benefits from IB teaching,[8] 41% of IB teachers chose IB's progressive pedagogy as the most important benefit of IB teaching, followed by high-quality professional development (32%). They rated involvement in global networks and international school communities as the least important (6%).
- While teachers perceived the IB's progressive pedagogy as the major benefit across all the jurisdictions, this was most salient in Anglo-Saxon countries (Australia, Canada, and the U.S.). However, IB teachers in East Asia (South Korea, Taiwan, and Shanghai) more frequently chose global recognition as an IB teacher as an important benefit. The greater weight placed on global recognition might relate to the role of IB schools in East Asia as providing internationally validated credentials to students as a pathway to global mobility for higher education (Lee & Wright, 2016; Wright & Lee, 2019).
- In parallel with the IB Learner Profile, we identified a set of attributes as desired capacities and responsibilities to become an IB teacher. We conceptualized this as the IB Teacher Profile in this study. Specifically, the research team built the IB Teacher Profile as an instrument to have IB teachers rank the importance of seven attributes (internationally minded, open-minded, flexibility, inquiry concepts and real work learning in pedagogy, collaboration, good teaching, and love teaching) from most to least beneficial. IB teachers chose the following attributes as the most important traits for an IB teacher: love teaching (32%), good teaching (23%), open-minded (14%), internationally minded (14%), inquiry concepts and real-world learning in pedagogy (8%), collaboration (5%), and flexibility (5%).
- We found variations across the jurisdictions. IB teachers in China, Turkey, Denmark more frequently chose "internationally minded" as an important attribute than did their peers in Canada, the U.S., and Australia. Put differently, the IB teachers in Anglo-Saxon countries relatively under-prioritized international mindedness, which might relate to the high proportion of public and private-national IB schools in these contexts that primarily cater to local populations.

[8] IB teachers were asked to rank five items related to the major benefits from IB teaching (e.g., global recognition as an IB teacher).

2.5. Pedagogical Practices: IB vs. TALIS

We explored teachers' pedagogical practices with a focus on teachers' 1) work patterns through their time use; 2) involvement in professional development; and 3) teaching, comprising pedagogical autonomy in the classroom, variety of assessment practices, and core teaching practices.[9] We have presented the key findings in Table 4.

Table 4. Pedagogical Practices: IB vs. TALIS

Variables		IB vs. TALIS (mean)			Key Points
		IB	TALIS	*p value*	
Time Use	Administrative tasks	11.05%	8.08%	***	• *IB teachers reportedly tended to spend higher portions of their classroom time on administrative tasks and less on keeping order in the classroom. This finding resonates with IB teachers showing higher levels of workload stress than TALIS teachers, but lower levels of student behavior stress.* • *The pattern existed across the jurisdictions, except China and Taiwan where IB teachers reported spending a greater proportion of their classroom time on keeping order than their TALIS counterparts did.*
	Keeping order in the classroom	12.47%	14.66%	***	
	Actual teaching and learning	76.48%	76.74%	-	
Professional Development	Student assessment practices	77.50%	72.50%	***	• *Of the eleven domains of professional development, IB teachers reported primarily involving themselves in the following three domains of professional development: Student assessment practices (77.5%), Knowledge of the curriculum (77.2%), and Knowledge and understanding of my subject field(s) (72.2%).*
	Knowledge of the curriculum	77.20%	83.0%	***	
	Knowledge and understanding of my subject field(s)	72.20%	80.60%	***	
	Pedagogical competencies in teaching my subject field(s)	70.60%	78.30%	***	

[9] We defined pedagogical autonomy in the classroom as teachers' feeling of control over deciding what to teach and how to teach it in their classroom. We measured the IB teachers' pedagogical autonomy in classroom with a 4-point Likert-type scale (1 = strongly disagree, 4 = strongly agree). We also measured variety of assessment practices with four survey items of the frequency of teachers' practices related to assessing student learning with a 4-point rating scale for each item: (1) administering own assessment, (2) providing written feedback on student work in addition to scores or grades, (3) letting students evaluate their own progress, and (4) observing students when working on particular tasks and providing immediate feedback (OECD, 2019) (1 = never or almost never, 4 = always). We measured core teaching practices with 7-of-16 items from the TALIS questionnaire (e.g., "I explain how new and old topics are related.") to explore the key features of teaching practices. We used a 4-point scale to measure teachers' frequency of employing core teaching practices (1 = never or almost never, 4 = always).

	Analysis and use of student assessments	63.30%	57.90%	***	• *Compared to TALIS teachers, IB teachers more frequently reported participation in the following domains of professional development: Student assessment practices, Approaches to individualized learning, Analysis and use of student assessments, Teaching cross-curricular skills, Teaching in a multicultural or multilingual setting, and communication with people from different cultures or countries.* • *Conversely, IB teachers reported less frequent participation in the following domains of professional development: Knowledge of the curriculum, knowledge and understanding of my subject field(s), pedagogical competencies in teaching my subject field(s), student behavior and classroom management, and teacher-parent/guardian co-operation.*
	Teaching cross-curricular skills	62.80%	54.60%	***	
	Approaches to individualized learning	61.00%	58.00%	*	
	Teaching in a multicultural or multilingual setting	51.10%	31.40%	***	
	Student behavior and classroom management	45.60%	63.70%	***	
	Communicating with people from different cultures or countries	39.10%	23.50%	***	
	Teacher-parent/guardian co-operation	30.30%	47.40%	***	
Pedagogical Autonomy in the Classroom		3.32	3.36	-	• *Both IB and TALIS teachers reported positive perceptions of their pedagogical autonomy in the classroom.*
Variety of Assessment Practices		3.05	2.74	***	• *IB teachers reported more frequent use of a variety of assessment practices than TALIS teachers did.* • *Variation in use of assessments among IB teachers was relatively smaller than that among TALIS teachers.*
Core Teaching Practices		2.88	2.63	***	• *IB teachers reported a greater frequency than TALIS teachers did in exercising core teaching practices characterized as 1) student-centered teaching and learning practices and 2) constructivist approaches to teaching, learning, and curriculum.* • *We found the same result when comparing IB teachers to TALIS teachers by programme or level (e.g., IB PYP vs. TALIS primary school).* • *Furthermore, IB teachers consistently reported more frequent*

				involvement in core teaching practices across all the jurisdictions than TALIS teachers did.

Notes. ***$p < .001$, **$p < .01$, *$p < .05$. "-" *indicates no statistical difference between groups.*

2.6. Pedagogical Practices: Comparisons among IB Teachers

Alongside comparing IB and TALIS teachers, we also conducted comparisons among IB teachers. While there were more similarities than differences among IB teachers' pedagogical practices, we wish to report the following notable finding. IB teachers working at continuum schools reported lower levels of pedagogical autonomy in the classroom than their counterparts working in schools running two IB programmes. We speculate that this finding might associate with how IB teachers in continuum schools sometimes confront challenges related to programme transitions by adjusting their pedagogical practices to align with practices of their colleagues working in other programmes to improve curriculum coherence among IB programmes. Lee and colleagues' (2012) study in continuum schools reported that "staff faced the challenge of ensuring that the learning goals of discrete IB program[mes] implemented in different organizational units (i.e., primary, middle, and secondary schools) would cohere into an effective educational program[me] for students as they moved through the [full] continuum IB program[mes]" (p. 666).

2.7. IB-Specific Pedagogical Practices

We also explored teachers' pedagogical practices in terms of "IB-specific" pedagogical practices. We investigated three areas: cross-programme involvement, IB-specific professional development, and IB-specific teaching practices. Key findings include:

- Cross-Programme Involvement: Approximately 85% of IB teachers reportedly taught in just one IB programme at their school. They reported being occasionally involved in teaching other adjacent programmes as a subject teacher or a supporting role (e.g., MYP teachers' advisory role in the PYP's Exhibition or co-ordinating collaborative activities/meetings).
- IB-Specific Professional Development: Across the DP core (Theory of Knowledge [TOK], Extended Essay [EE], and CAS),[10] more than half of DP teachers reported having attended professional development activities in TOK (53%) and EE (52%) in the past year. For CAS, slightly more than one-third of IB teachers had reportedly participated in professional development activities (34%). IB teachers in Turkey reported the highest level of professional development participation in TOK (68%), EE (69%), and CAS (57%), followed by South Korea and Taiwan. More than half of IB PYP teachers (58%) had reportedly participated in professional development for the PYP Exhibition in the past year. IB teachers noted that they attend IB professional development activities about once every 2-3 years. IB teachers in

[10] IBDP students are required to complete three core components over the course of their DP study: TOK, EE, and CAS. TOK aims to cultivate students' ability to think critically by providing students with core philosophical issues and debates (IB, 2021). EE is a 4,000-word essay that is based on students' academic study and research investigation. CAS is designed to provide opportunities for students' whole-person development through creative activities and community service (Lee et al., 2017).

Australia reported the highest frequency of participation, and IB teachers in Canada reported the lowest.

IB-Specific Teaching Practices: We asked IB teachers how frequently they exercise IB-specific teaching practices (e.g., I place a strong emphasis on students' finding their own information). Overall, IB teachers showed moderately positive responses to nine statements about IB-specific teaching practices. In particular, IB teachers agreed most with the following two statements: "I use real-life contexts and examples in my teaching" and "I emphasize a collaborative relationship between teachers and students."

2.8. School-Level Professional Characteristics

We investigated four domains of school-level professional characteristics: 1) school-level practices for promoting diversity; 2) PLC,[11] which we measured by combining organizational learning, professional collaboration in lessons, and exchange/co-ordination for teacher collaboration; 3) institutional support; and 4) school climate.[12] We have presented the key findings in Table 5.

Table 5. School-Level Professional Characteristics: IB vs. TALIS

Variables		IB vs. TALIS			Key Points
		IB	TALIS	*p value*	
School Practices for Promoting Diversity	Teaching and learning practices on global issues	89.20%	63.10%	***	• *According to IB teachers, IB schools promoted educational practices for diversity much more widely, compared to reports from TALIS teachers about their schools.* • *Variation in educational practices among IB schools across jurisdictions was smaller than that of TALIS schools.* • *"Adopting teaching and learning practices that integrate global issues throughout the curriculum"*
	Supporting diverse ethnic and cultural identities	81.80%	59.00%	***	
	Organizing multicultural events	75.50%	48.20%	***	
	Teaching how to deal with ethnic/racial	70.80%	62.40%	***	

[11] Since teachers' professional collaboration is highlighted as a sustainable way of improving schools (Lee & Louis, 2019), we explored teachers' engagement in a PLC within their schools. We measured PLC with three components. The first component was organizational learning, referring to teachers' collective efforts to search, develop, support, and accept new ideas to solve problems and change their practices in school (e.g., "Most teachers in this school are open to change"). We conceptualized these features as "organizational learning" as informed by Louis and Lee's (2016) work. We drew the other two components of PLC from TALIS 2018, focusing on teachers' engagement in activities related to professional community: 1) professional collaboration in lessons (four items) and 2) exchange and co-ordination among teachers (four items). For the survey items, we used a 6-point scale of frequency (1 = never, 6 = once a week or more).

[12] The TALIS measures of school climate in our analysis focused on to what extent teachers perceive 1) shared beliefs, responsibilities, and practices (three items) and 2) participation in decision-making processes (five items). Therefore, we explored two aspects of school climate: the overall school climate, including all eight items, and school climate regarding participation in decision-making (five items). We used a 4-point Likert-type scale to measure school climate (1 = strongly disagree, 4 = strongly agree).

	discrimination				*seemed particularly salient in IB schools.*
PLC	Organizational learning	3.18	2.97	***	*• IB teachers perceived a higher level of their colleagues' capacity for organizational learning than TALIS teachers, except for those in China and South Korea.* *• PYP teachers agreed more frequently that their fellow teachers had the capacity for organizational learning, compared to TALIS primary school teachers.*
	Professional collaboration in lessons	3.16	2.87	***	*• IB teachers reportedly engaged in activities related to professional community, including professional collaboration in lessons and exchange/co-ordination for teacher collaboration, approximately 5 to 10 times a year.* *• By contrast, TALIS teachers reported that they engaged in professional community activities more than 2 to 4 times but under 5 to 10 times per year.* *• IB teachers reported a higher level of engagement in professional community activities across all jurisdictions, except Denmark.* *• The difference between IB and TALIS teachers was most salient in the PYP (primary school for TALIS teachers).*
	Exchange and co-ordination for teacher collaboration	4.59	3.89	***	*• IB teachers reported being much more active on "exchange and co-ordination among fellow teachers" in school than TALIS teachers, while the group difference in "exchange and co-ordination" was significant across the IB programmes or levels of schooling in the TALIS data.*
Institutional Support	Formal induction during the first employment	48.00%	53.20%	***	*• IB teachers reported receiving a formal induction "at the current school" more frequently than TALIS teachers did.*
	Formal induction at the current school	52.40%	30.10%	***	

	Informal induction during the first employment	36.80%	27.20%	***	• *IB teachers reported participation in informal induction activities during their first employment and at the current school more frequently than TALIS teachers did.*
	Informal induction at the current school	50.30%	29.40%	***	
	Presence of assigned mentor	19.80%	9.70%	***	• *IB teachers reported being more actively engaged in mentor-mentee relationships in school than TALIS teachers did.* • *Approximately 1-in-5 IB teachers reported having their school assign them a mentor, whereas about 1-in-10 TALIS teachers reported having a school-assigned mentor.* • *More than twice as many IB than TALIS teachers reported serving as mentors for teachers in their school.*
	Presence of assigned mentee(s)	26.20%	12.10%	***	
School Climate	Overall school climate	2.85	2.87	-	• *Both IB and TALIS teachers perceived school climate as moderately positive.*
	Participation in decision-making	2.83	2.85	-	

*Notes. ***p < .001, **p < .01, *p < .05. "-" indicates no statistical difference between groups.*

2.9. School-Level Professional Characteristics: Comparisons among IB Schools

We investigated the same four domains of school-level professional characteristics noted above among IB schools. We have presented key findings in Table 6.

Table 6. School-Level Professional Characteristics: Comparisons among IB Schools

Variables		Continuum	*p value*	School Type	*p value*
School Practices for Promoting Diversity	Teaching and learning practices on global issues	-	-	-	-
	Supporting diverse ethnic and cultural identities				
	Organizing multicultural events				
	Teaching how to deal with ethnic/racial discrimination				
PLC	Organizational learning	One IB programme > Two IB programmes or Continuum	***	Public > Private-national, Private-international	**

PLC	Professional collaboration in lessons	Continuum > One or two IB programmes	*	Private-national > Public	***
	Exchange and co-ordination for teacher collaboration	Two IB programmes > One IB programme	*	Private-national > Private-international	*
Institutional Support	Formal induction during the first employment	-	-	Private-international > Public, Private-national	*
	Formal induction at the current school	Continuum > Two IB programmes > One IB programme	***	Private-national > Public, Private-international	***
	Informal induction during the first employment	-	-	-	-
	Informal induction at the current school	-	-	Private-international > Private-national, Public	***
	Presence of assigned mentor	Continuum > One or two IB programmes	*	Private-national > Private-international, Public	**
	Presence of assigned mentee(s)	-	-	-	-
School Climate	Overall school climate	One IB programme > Continuum	***	Public > Private-national, Private-international	***
	Participation in decision-making	One IB programme > Continuum	***	Public > Private-national, Private-international	***

*Notes. ***p < .001, **p < .01, *p < .05. "-" indicates no statistical difference between groups.*

2.10. School-Level IB-Specific Teacher Collaboration

Alongside PLC, we explored teachers' collaboration at the school level. We asked IB teachers how often they engage in IB-specific collaborative activities, including:

- Share ideas about effective teaching with teachers in the same IB programme.
- Share teaching materials or learning activities with teachers in the same IB programme.
- Discuss IB programme standards and assessment with teachers in the same IB programme.
- Share what I learned at workshops or conferences [taking place outside of the school] with teachers in the same IB programme.
- Discuss the educational philosophy and values embedded in the Learner Profile with teachers in the same IB programme.

Below is a list of key findings.

- On average, IB-specific collaboration activities occurred 5-10 times a year in schools. While the IB teachers tended to share their ideas and teaching materials relatively frequently, they were less frequently involved in sharing what they learned at workshops or conferences outside the school. This result echoes Chadwick et al.'s study (2019).
- In terms of cross-jurisdictional comparison, IB teachers in Turkey reported the highest level of involvement in IB-specific teachers' collaboration (4.32 on a 6-point scale of frequency), followed by IB teachers in China (4.19) and Australia (4.14)[13].
- IB teachers in continuum schools reported more frequent involvement in IB-specific teacher collaboration than their counterparts in single-programme IB schools. This result echoes Hallinger et al.'s study (2010).
- On average, IB teachers in private-national schools reported more involvement in IB-specific teacher collaboration than those in public schools.

2.11. Group Comparisons by Latent Mean Analysis

In Table 7, we have summarized results from a series of latent mean analysis.[14] There are two objectives for us to present these results, despite some of the results already being shown in previous tables. First, latent mean analysis is a more rigorous way of comparing groups than *t*-tests and ANOVAs due to its superior ability to detect measurement error (Aiken et al., 1994; Cole et al., 1993; Hancock, 1997). Second, since latent mean analysis provides specific effect sizes (i.e., Cohen's *d*) to contextualize group differences, it is more intuitive to understand the magnitude of differences between groups. As Cohen (1990) highlighted, statistical significance such as *p* value is in-and-of itself useful, but the primary product of statistical analysis is a measure of effect size.

In Table 7, we have presented a series of comparisons in group means. Group I indicated a higher mean level than that of Group II. The effect sizes can be understood as small ($d = 0.2$), medium ($d = 0.5$), and large ($d \geq 0.8$).

Table 7. Group Comparisons by Latent Mean Analysis

Variables		Group I	Group II	Latent Mean Difference (I-II)	Effect Size *d*	*p* value
Motivation to Join the Profession	Personal utility	TALIS	IB	0.138	0.193	***
		TALIS primary	PYP	0.163	0.218	***
		TALIS junior secondary	MYP	0.130	0.188	**
		TALIS senior secondary	DP & CP	0.100	0.145	**
		IB public	IB private-national	0.146	0.224	**

[13] We measured IB-specific teachers' collaboration on a 6-point scale of frequency of occurrence (1 = Never, 6 = Once a week or more).

[14] We used latent mean analysis to measure group differences in means of certain constructs with multidimensional properties/characteristics (e.g., motivation, well-being).

		IB public	IB private-international	0.236	0.356	***
	Social utility	PYP	TALIS primary	0.087	0.206	***
		MYP	TALIS junior secondary	0.065	0.150	**
		TALIS senior secondary	DP & CP	0.103	0.246	***
		IB public	IB private-national	0.077	0.249	**
		IB public	IB private-international	0.075	0.260	*
Self-Efficacy in a Multicultural Classroom		IB	TALIS	0.301	0.533	***
		PYP	TALIS primary	0.320	0.555	***
		MYP	TALIS junior secondary	0.249	0.435	***
		DP & CP	TALIS senior secondary	0.338	0.627	***
Pedagogical Autonomy in Classroom		Two IB programmes	Continuum	0.088	0.284	*
Core Teaching Practices		IB	TALIS	0.154	0.675	***
		PYP	TALIS primary	0.200	0.721	***
		MYP	TALIS junior secondary	0.136	0.648	***
		DP & CP	TALIS senior secondary	0.150	0.715	***
Organizational Learning		IB	TALIS	0.198	0.323	***
		PYP	TALIS primary	0.235	0.400	***
		MYP	TALIS junior secondary	0.143	0.242	***
		DP & CP	TALIS senior secondary	0.205	0.307	***
		One IB programme	Continuum	0.144	0.268	**
		IB public	IB private-national	0.101	0.191	**
		IB public	IB private-international	0.188	0.390	***
Professional Community	Professional collaboration in lessons	IB	TALIS	0.375	0.338	***
		PYP	TALIS primary	0.997	0.838	***
		MYP	TALIS junior secondary	0.241	0.232	***

		DP & CP	TALIS senior secondary	0.106	0.098	*
	Exchange and co-ordination	IB	TALIS	0.734	0.670	***
		PYP	TALIS primary	0.829	0.804	***
		MYP	TALIS junior secondary	0.642	0.576	***
		DP & CP	TALIS senior secondary	0.703	0.690	***
IB-Specific Teacher Collaboration		Continuum	One IB programme	0.268	0.242	**
		IB private-national	IB public	0.294	0.268	***
School Climate	Overall school climate	One IB programme	Continuum	0.298	0.458	***
		IB public	IB private-national	0.203	0.312	***
		IB public	IB private-international	0.325	0.535	***
	Participation in Decision-Making	One IB programme	Continuum	0.316	0.463	***
		IB public	IB private-national	0.247	0.363	***
		IB public	IB private-international	0.363	0.569	***

*Notes. ***p < .001, **p < .01, *p < .05. We found no statistical difference between groups for the following analyses: 1) Motivation to join the profession (personal utility) - Continuum vs. One or two IB programmes, 2) Motivation to join the profession (social utility) – TALIS vs. IB, Continuum vs. One or two IB programmes, 3) Pedagogical autonomy in the classroom - TALIS vs. IB, IB continuum vs. One IB programme, 4) Organizational learning - Continuum vs. Two IB programmes, 5) IB-specific teacher collaboration - Continuum vs. Two IB programmes, IB public vs. IB private-international, 6) School climate (overall) – TALIS vs. IB, Continuum vs. Two IB programmes and 7) School climate (participation in decision-making) - TALIS vs. IB, Continuum vs. Two IB programmes.*

2.12. Factors Predicting Key Psychological Characteristics

One of our research objectives was to examine traits (psychological and pedagogical characteristics) that would enable an IB teacher to feel professionally satisfied and efficacious. To this end, we explored what teacher- and school-level characteristics associated significantly with three psychological characteristics of IB teachers: work-related stress, self-efficacy in a multicultural classroom, and job satisfaction. In Table 8, we have presented key findings from a series of HLM analyses.[15]

Table 8. Factors Predicting Key Psychological Characteristics

[15] HLM is an extended form of regression analysis, estimating relations between independent variables and one or more dependent variables, that is used when data has a nested structure (e.g., students within schools).

Dependent Variables / Independent Variables[16]	Workload Stress	Student Behavior Stress	Self-Efficacy in a Multicultural Classroom	Job Satisfaction (Work Environment)	Job Satisfaction (Profession)
Teacher-level Independent Variables					
Demographics					
Gender (reference group[17] = male)					
Age group					0.05**
Educational attainment (reference group = under master's degree)					
Study-abroad experience					
Choice of teaching as a career					0.09*
Years working at any IB programme at this school					
Years working as a teacher at any IB school in total					
Years working in other education roles, not as a teacher (e.g., university lecturer, nurse)					
The role in the IB Educator Network					
Psychological Characteristics					
Motivation to join the profession (personal utility)		0.08*		0.08*	-0.05*
Motivation to join the profession (social utility)			0.13***	-0.15***	0.12***
Work-related stress (workload)	n/a			-0.15**	-0.09**
Work-related stress (student behavior)					-0.13***
The major benefits from IB teaching (reference group = "High quality professional development")					

[16] A regression analysis explores whether, and the extent to which, a dependent variable is influenced by other independent variables. Put differently, independent variables are predictive to the dependent variable; each independent variable is not changed by other independent variables.

[17] Here, the reference group indicates male teachers who are compared with female teachers.

Dependent Variables / Independent Variables[18]	Workload Stress	Student Behavior Stress	Self-Efficacy in a Multicultural Classroom	Job Satisfaction (Work Environment)	Job Satisfaction (Profession)
Teacher-level Independent Variables					
A pedagogy known to produce students who are motivated to continue inquiry and lifelong learning beyond national curriculum.				-0.08*	
The important attributes in working as an IB teacher (reference group = "internationally minded")					
Self-efficacy in a multicultural classroom	n/a				
Pedagogical Characteristics					
Time spent on actual teaching and learning (%)	-0.01***	-0.01***			
Frequency of involvement in professional development				0.02**	
Pedagogical autonomy in classroom	-0.13**			0.12**	
Variety of assessment practices					
Core teaching practices					
Teaching in one or two IB programmes (reference group = one IB programme)					
Cross-programme involvement					
Frequency of involvement in IB-related professional development					
IB-specific teaching practices			0.31***		
School-level Independent Variables					
Demographics					
School type (reference group = public)					
Private-national	-0.18*				
Private-international	-0.29*				

[18] A regression analysis explores whether, and the extent to which, a dependent variable is influenced by other independent variables. Put differently, independent variables are predictive to the dependent variable; each independent variable is not changed by other independent variables.

Dependent Variables / Independent Variables[19]	Workload Stress	Student Behavior Stress	Self-Efficacy in a Multicultural Classroom	Job Satisfaction (Work Environment)	Job Satisfaction (Profession)
School-level Independent Variables					
IB programme status (reference group = Continuum)					
Two IB programmes				0.20*	0.16*
One IB programme					
Pedagogical Characteristics					
Induction activities at this school					
Formal induction					
Informal induction					
Engagement in mentor-mentee relationship at this school					
Having an assigned mentor					
Currently an assigned mentor					
School climate				0.36**	
School practices for diversity					
Teachers' capacity for organizational learning					
Engagement in teachers' professional community					
Professional collaboration in lessons among teachers					
Exchange and co-ordination among teachers					
IB-specific teacher collaboration					

*Note. ***p < .001, **p < .01, *p < .05. A blank cell indicates a non-significant relation between the two intersecting variables.*

Below is a summary of the findings from Table 8.

- Workload Stress: IB teachers who spent a larger proportion of class time on non-core parts of classroom activities, such as administrative tasks and keeping order in the classroom, reported a higher level of workload stress. However, when IB teachers perceived more autonomy in the classroom, they reported less workload stress. IB teachers working in public schools reported

[19] A regression analysis explores whether, and the extent to which, a dependent variable is influenced by other independent variables. Put differently, independent variables are predictive to the dependent variable; each independent variable is not changed by other independent variables.

a higher level of workload stress than their counterparts in private-national schools and private-international schools.

- Student Behavior Stress: IB teachers who spent more time on actual teaching and learning in the classroom reported less student behavior stress. IB teachers who reported a higher level of personal utility motivation to join the teaching profession perceived a higher level of student behavior stress.
- Self-Efficacy in a Multicultural Classroom: IB teachers who joined the teaching profession mainly because of the profession's contribution to society tended to report higher levels of self-efficacy in a multicultural classroom. IB-specific teaching practices associated positively with self-efficacy in a multicultural classroom. Furthermore, as we highlighted above, IB teachers reported a significantly higher level of self-efficacy in a multicultural classroom than TALIS teachers did. Given these linkages, the significantly higher level of the IB teachers' self-efficacy in a multicultural classroom may associate with IB teachers' involvement in IB-specific teaching practices.
- Job Satisfaction with the Work Environment: Social utility motivation to become a teacher associated positively with teachers' work environment satisfaction. IB teachers' workload stress and student behavior stress associated negatively with job satisfaction with the work environment. IB teachers who ranked "high quality professional development" as the major benefit from IB teaching reported a higher level of work environment satisfaction than those who chose "a pedagogy known to produce students who are motivated to continue inquiry and lifelong learning beyond national curriculum". The more frequently IB teachers reported involvement in professional development, the higher their reported job satisfaction with the work environment. Also, pedagogical autonomy in the classroom positively associated with IB teachers' job satisfaction with the work environment. At the school level, teachers working in schools with two IB programmes reported a higher level of work environment satisfaction than those in continuum schools did. Last, a positive school climate associated positively with teachers' work environment satisfaction.
- Job Satisfaction with Profession: IB teachers who reported being strongly motivated by social causes and contributions to join the teaching profession reportedly were more satisfied with their profession, compared to their peers who reported being mainly motivated by personal utility. Both workload stress and student behavior stress associated negatively with IB teachers' satisfaction with their profession. IB teachers' job satisfaction with the profession also associated with demographic characteristics: older teachers reported higher job satisfaction with the profession. Also, IB teachers whose first career choice was teaching reported a higher level of job satisfaction with the profession than those who did not choose teaching as their first career. At the school-level, teachers working in schools with two IB programmes reported a higher level of satisfaction with the profession than those in continuum schools.

3. LINKING KEY FINDINGS TO RESEARCH QUESTIONS

In Table 9, we have summarized answers to our research questions by linking them to our key findings to enable our readers to see a complete picture of this study.

Table 9. Research Questions and Implications

Research Questions	Key Findings
What are the common (or the most salient) workforce characteristics of IB teachers in comparison with those of non-IB teachers? See Table 1 for full findings.	• *IB teachers reportedly held a higher level of qualifications than TALIS teachers. Most IB teachers reported holding master's degrees, while most TALIS teachers reported holding bachelor's degrees. We found similar patterns in almost all the jurisdictions in our study.* • *Another distinctive feature of IB teachers was their reporting of diverse experiences and backgrounds. Compared to TALIS teachers, they reported: significantly more study-abroad experiences, took more diverse pathways to become teachers, and had more years of working in other education roles and non-education roles prior to joining the teaching profession.*
Do IB teachers' perceptions of the teaching profession differ from those of non-IB teachers? See Tables 2 and 3 for full findings.	• *Compared to TALIS teachers, IB teachers reported being more satisfied with their jobs, while also reporting a higher level of work-related stress.* • *Work-related stress differed by jurisdictions, school type, and/or continuum status.* • *IB teachers perceived the progressive pedagogy of IB programmes and opportunities for high-quality professional development as the two most important benefits from IB teaching. They perceived involvement in global networks and international school communities as the least important benefit. However, relatively more IB teachers in East Asia saw global networks and recognition as an important benefit.*
How do IB teachers spend their work time? See Table 4 for full findings.	• *Compared to TALIS teachers, IB teachers reportedly spent a greater portion of their classroom time on administrative tasks and a lower portion of their time on keeping order in the classroom.*
Are there any commonalities and differences in professional development activities between IB teachers and non-IB teachers? See Table 4 for full findings.	• *IB teachers reported involvement more frequently in the following three domains for their professional development than TALIS teachers: student assessment practices, knowledge of the curriculum, and knowledge and understanding of my subject field(s).*
Are there any commonalities and differences in teaching between IB teachers and non-IB teachers? See Tables 4 and 7 for full findings.	• *Both IB and TALIS teachers perceived pedagogical autonomy in the classroom positively.* • *IB teachers consistently indicated more frequent use of diverse methods in assessing student learning outcomes in all the jurisdictions than TALIS teachers did.* • *IB teachers indicated more frequency than TALIS teachers did in exercising core teaching practices characterized as 1) student-centered teaching and learning practices and 2) constructivist approaches to*

	teaching, learning, and curriculum. We found this pattern across the three programmes and all eight jurisdictions. *• IB teachers reported being more frequently involved in teaching adjacent programmes as subject teachers or in other supporting roles than the TALIS teachers did.*
Are there any commonalities and differences in school-level practices that support diversity between the IB and the TALIS schools? See Table 5 for full findings.	*• IB teachers reported educational practices for diversity as being much more widely promoted in their schools than how the TALIS teachers described their schools. Variation in educational practices among IB schools across jurisdictions was smaller than that of TALIS teachers described of their schools.*
What are the most salient features of IB teachers' collaboration in conjunction with improving teaching practices? See Table 7 for full findings.	*• IB teachers indicated a tendency to share their ideas and teaching materials frequently. However, they reported being less commonly involved in sharing what they learned at workshops or conferences outside of the school.* *• There were variations in IB teachers' engagement in the professional community by school type and continuum status.* *• IB teachers attended "IB-specific" professional development activities about once every 2-3 years. This seems to be related to the rigorous school authorization process and the IB's regular evaluation cycle.*
Are there any commonalities and differences in IB teachers' collaboration practices in comparison with TALIS teachers? See Tables 5 and 7 for full findings.	*• IB teachers reported that their colleagues had a higher capacity for organizational learning than TALIS teachers did. Specifically, IB PYP teachers more frequently agreed that their fellow teachers had greater organizational learning capacity.* *• IB teachers reportedly engaged more often than TALIS teachers in activities in the professional community (i.e., approximately 5 to 10 times a year). The difference between IB and TALIS teachers was most salient in the PYP (primary school for TALIS teachers) in terms of "professional collaboration in lessons".* *• Both IB and TALIS teachers reported being more active on "exchange and co-ordination" than "professional collaboration in lessons".*[20] *• For cross-jurisdictional comparison, IB teachers indicated a higher level of engagement in professional community activities than their TALIS counterparts across all jurisdictions, except Denmark.*
Are there any commonalities and/or differences in institutional support (i.e., induction and mentor-mentee relationship) between IB and TALIS schools?	*• IB teachers reported receiving a formal induction "at the current school" more frequently TALIS teachers did.* *• IB teachers reported participation in informal induction activities during their first employment and at the current school more frequently than TALIS teachers did, a pattern we found in most jurisdictions.* *• IB teachers reported being more actively engaged in mentor-mentee relationships in school than TALIS teachers did.*

[20] This pattern was also found in other studies (e.g., Lee & Kim, 2016; Lee et al., 2012; Lin et al., 2018), demonstrating that teachers are less active on de-privatized practices (e.g., open sharing of classroom management and teaching practices through formal/informal invitations of colleague teachers) and joint teaching, the key components of "professional collaboration in lessons."

See Table 5 for full findings.	
Are there any differences in school climate perceived by teachers within IB schools and between IB schools and TALIS schools? See Table 5 for full findings.	• *There was no significant difference in perceptions of school climate between IB and TALIS teachers. Both IB and TALIS teachers perceived school climate as moderately positive (2.85 and 2.87, respectively, on a 4-point rating scale).*[21] • *Among IB teachers, those working in continuum schools perceived school climate more negatively compared to their colleagues in schools implementing a single IB programme or two IB programmes. We speculate a relation to the higher level of workload stress reported by teachers in continuum schools. Teachers in single-programme IB schools reported the most positive perception of school climate.* • *IB teachers working in public schools perceived school climate more positively than their counterparts in private-national and private-international schools.*
What demographic characteristics and pedagogical practices of IB teachers are associated with their work-related stress, self-efficacy in a multicultural classroom, and job satisfaction when controlling for key demographics? See Tables 2 and 3 for full findings.	• *Workload Stress: When controlling for teacher- and school-level variables, IB teachers who spent more time on actual teaching and learning reported less workload stress. Also, when IB teachers perceived more autonomy in the classroom, they reported less workload stress.* • *Work-Related Stress (Student behavior): IB teachers who spent more time on actual teaching and learning reported less student behavior stress. In addition, IB teachers who reported a higher level of personal utility motivation to join the teaching profession (e.g., steady career path and job security) perceived a higher level of student behavior stress.* • *Self-Efficacy in a Multicultural Classroom: Social utility motivation to become a teacher (e.g., teaching for influencing the development of children and young people) associated positively with IB teachers' self-efficacy in a multicultural classroom. Another positive predictor was IB-specific teaching practices.* • *Job Satisfaction with Work Environment: Social utility motivation to become a teacher associated positively with teachers' work environment satisfaction. In contrast, teachers' workload stress and student behavior stress associated negatively with job satisfaction with the work environment. Also, the more frequently IB teachers reported involvement in professional development, the higher they reported job satisfaction with the work environment. Pedagogical autonomy in the classroom also associated positively with IB teachers' job satisfaction with the work environment.* • *Job Satisfaction with Profession: IB teachers who reported being strongly motivated by social causes and contributions to join the teaching profession also reported greater satisfaction with their profession, compared to peers who reportedly were mainly motivated by personal utility to become a teacher. In addition, both workload stress and student behavior stress associated negatively with IB teachers' satisfaction with their profession.*
What school-level characteristics are associated	• *Job Satisfaction with Work Environment: When controlling for teacher-level characteristics, teachers working in schools with multiple*

[21] These findings run in opposition to Boal and Nakamoto's (2020) study on the PYP's impact on school climate. However, they do align with a Nakamoto et al. (2021) study on school climate that used similar quantitative methods to the Boal and Nakamoto study but with comparable data from MYP schools.

with enabling IB teachers to feel professionally more satisfied, efficacious, and less stressed? See Tables 2 and 3 for full findings.	*IB programmes had a higher level of work environment satisfaction than those in continuum schools. School climate also associated positively with teachers' work environment satisfaction.* • *Job Satisfaction with Profession: Teachers working in schools with multiple IB programmes reported a higher level of satisfaction with their profession than those at continuum schools. Notably, school climate associated positively with teachers' work environment satisfaction, whereas it did not associate positively with job satisfaction with the profession. It is reasonable to suggest, therefore, that cultural aspects of school organization, such as school climate, are critical for IB teachers' job satisfaction with the work environment, but not with their profession.*

4. RECOMMENDATIONS

Drawing on the key findings, we have provided a list of recommendations for the IB as an organization and for IB schools.

4.1. Recommendations to the IB

First, we note that IB teachers reported a higher level of self-efficacy in a multicultural classroom, compared to TALIS teachers. In addition, IB teachers indicated more active engagements than TALIS teachers did in core teaching practices and organizational learning. We found these patterns across all three programmes and eight jurisdictions. Furthermore, IB teachers reportedly were more engaged in PLCs in their schools than TALIS teachers, another pattern found across all programmes and in most jurisdictions. These positive professional characteristics of IB teachers and schools should be recognized as one of the IB's strengths as a major education provider that aims to develop young people across the globe. We recommend that the IB further investigates whether such favorable findings are generalizable and how they impact student learning experiences and outcomes.

Second, teachers in IB schools reported educational practices for diversity much more widely than their counterparts in TALIS schools. The variation in those educational practices among IB schools across jurisdictions was smaller than in TALIS schools. In particular, the school practice of "adopting teaching and learning practices that integrate global issues throughout the curriculum" was particularly salient in IB schools. This phenomenon aligns well with the IB's mission that aims to "create a better and more peaceful world through intercultural understanding and respect" (IB, 2017). We recommend that the IB continues to support practices that value diversity in its authorized schools as a distinctive feature of the IB. Inside the classroom, schools can promote global citizenship by relating curriculum content to global events and exposing students to the perspective of diverse people worldwide. At the same time, schools can also encourage students to understand and respect diversity within their own societies by gender, race/ethnicity, and social class, as examples. Outside the classroom, schools can provide practical opportunities for students to interact with diverse groups through community engagement in the PYP's Exhibition, the MYP's Community Project or Personal Project, and the DP's CAS.

Third, we believe that the IB should pay attention to the relatively higher level of workload stress of teachers in public IB schools, especially with regards to why teachers reported a higher level of workload stress and how school leaders can support them in implementing IB programmes.

Fourth, in relation to the workload stress issue, we suggest that the IB also pays attention to teachers' workload issues in continuum schools. On the one hand, teachers in continuum schools reported higher 1) engagement in professional collaboration, 2) participation in induction programs, and 3) rates of having a mentor assigned from the school. On the other hand, they perceived a higher level of workload, a lower level of job satisfaction, lower pedagogical autonomy, and a less positive school climate. These mixed findings suggest that while the organizational features of continuum schools could offer opportunities for teachers to be a part of a PLC (Lee et al., 2012; Lin et al., 2018), such structures and functionalities can impose more workload on teachers, which can dampen individual

teachers' job satisfaction and overall school climate. If this is the case, engagement in professional community and collaboration can be perceived as mandated, adding to workload rather than offering authentic opportunities for professional growth. Although this interpretation needs to be further examined through follow-up research, given that 11 out of the 173 schools were continuum schools in our study, the paradoxical features of continuum schools on teachers' work life and practices warrant further investigation.

Fifth, like TALIS teachers, IB teachers reported being less active on de-privatized practices (e.g., open sharing of classroom management and teaching practices through formal/informal invitations of colleague teachers) and joint teaching, the key components of "professional collaboration in lessons." In this regard, the IB may need to provide workshops for teachers and school leaders on how to promote de-privatized practices without undermining individual teachers' pedagogical autonomy.

Finally, we recommend promoting IB global networks and recognition as an IB teacher among the IB teacher communities, especially in Anglo-Saxon countries. This could be achieved by providing more opportunities for teachers to interact beyond regional workshops and annual conferences, for example, by further leveraging the International Baccalaureate Educator Network (IBEN). In fact, in East Asia, senior IB educators highly regard teachers who are part of the IBEN. Consequently, more IB teachers in East Asia aspire to achieve similar professional development within the IB community because they regard global networks and international school communities as a valuable aspect of their career development.

4.2. Recommendations to IB Schools

First, in relation to IB teachers' work stress and job satisfaction, we recommend that school leaders place more emphasis on cultivating supportive work environments for IB teachers to 1) spend more time in actual teaching and learning activities and 2) engage in professional development opportunities as the more frequently IB teachers reported involvement in professional development, the higher their reported job satisfaction with the work environment. In addition, school leaders should safeguard teachers' pedagogical autonomy in the classroom, given the positive role of pedagogical autonomy in lowering teachers' workload stress and increasing job satisfaction with work environments. Finally, school leaders should pay attention to cultivating a positive school climate in relation to teachers' satisfaction with work environments. Note that school climate was positive when teachers perceived the presence of shared beliefs, responsibilities, practices, and participation in decision-making processes. School leaders need to ensure the presence of such organizational beliefs and practices through their leadership and management.

Second, in terms of a professional community, both IB and TALIS teachers reported being more active on "exchange and co-ordination" than "professional collaboration in lessons." Also, as noted above, IB teachers reported being less active on de-privatized practices and joint teaching. We suggest the following three inter-related approaches to promoting professional collaboration in lessons: 1) IB school leaders can encourage teachers to participate in workshops outside the school aimed at IB-specific teaching practices and lessons (Culross & Tarver, 2007; Savage & Drake, 2016; Storz & Hoffman, 2018) and also promote "peer-to-peer teacher observations" within a school (Hamilton, 2013), and 2) IB school

leaders should seek to cultivate accommodative school cultures that promote de-privatized practices as naturally occurring professional practices, not as externally imposed one-off initiatives.

Third, while IB teachers tended to share their ideas and teaching materials relatively frequently, they reported less frequent involvement in sharing what they learned at workshops or conferences outside the school. Given this finding, we suggest that there should be greater opportunities for teachers to share what they learn from outside. We recommend that one platform for this is IBEN, which aims to train educators to support the development and implementation of IB programmes. Chadwick et al.'s (2019) study drew attention to the high potential of IBEN to develop teachers' knowledge, build confidence, and benefit their students. We concur with their call for IB school leaders to strengthen recognition and awareness of IBEN to foster an international professional community.

5. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

We recognize that there are several limitations to this study. First, our sampling was not based on random schemes, given the voluntary participation. As a result, we could not establish representativeness among IB teachers. Also, since the demographics of the entire IB teacher population is not known, it was not possible to check whether our IB teacher samples were similar or dissimilar to those not included in our data. Second, although our survey covered one-third of IB schools in eight jurisdictions, which is a high school-level participation rate, we could not compute response rates of each school due to data inaccessibility at the level of teachers within schools. Third, while we tried to take school-level characteristics into account in our analysis, we could not include some important variables due to data inaccessibility, such as a school community's socio-economic status.

We await follow-up studies that further tease out professional characteristics of IB teachers. As examples, we suggest that studies could build on our findings by investigating

- what facilitates IB teachers' engagement in PLCs;
- the nature and type of IB professional development;
- how workload stress relates to pressure on IB teachers' performance; and
- how IB teaching differs from general descriptions of high-quality or effective teaching

Moreover, we call for in-depth investigations in each of the eight jurisdictions in this study to further illuminate how contextual factors may shape the professional characteristics of IB teachers.

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Corresponding researcher:
Moosung Lee, Ph.D.
Email:leemoosung@gmail.com