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Observing Classroom Instruction in Schools Implementing the International Baccalaureate Programme

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The International Baccalaureate (IB) programme utilizes an inquiry-based multi-disciplinary approach and focuses on the teaching of critical-thinking skills. The IB programme is growing at a rapid rate within the United States, with the overall number of IB schools having more than doubled in the last five years. The purpose of the present study was two-fold: (a) to specifically focus on classroom instruction and students' behavior within Texas IB schools, and (b) to highlight the importance of systematic classroom observation as an evaluative method; in particular, the simultaneous use of three observation instruments to illustrate the importance of examining instruction from multiple perspectives. Systematic observations of 85 classrooms from eight Texas IB schools revealed that instruction in most of the schools was active, with teachers often engaging students, exploring new skills and key concepts, explaining, elaborating, and evaluating. Overall, the general instructional practices and student behaviors/activities observed were favorable and were higher than those found in similar classrooms in Texas schools. The amount of time that students were observed as being on-task was dramatically higher than the amount of student on-task time measured in other observational studies.

Keywords: international baccalaureate, IB, systematic classroom observation, student behavior, instructional practice

Although there has been a dramatic increase in the number of schools implementing International Baccalaureate (IB) programmes, limited research has emerged about the IB programme. The IB programme utilizes an inquiry-based, multi-disciplinary approach and focuses on the teaching of critical-thinking skills. The IB programme is growing at a rapid rate within the United States, with the overall number of IB schools having more than doubled in the last five years. The purpose of the present study was two-fold: (a) to specifically focus on classroom instruction and students' behavior within Texas IB schools, and (b) to highlight the importance of systematic classroom observation as an evaluative method; in particular, the simultaneous use of three observation instruments to illustrate the importance of examining instruction from multiple perspectives.

History of the IB Programme

The International Baccalaureate Organization (IBO) originated in 1968 at the International School of Geneva with the Diploma Program (DP; IBO, 2011c).

The programme was designed by an assembly of teachers whose students typically moved around the world, due to their families' internationally affiliated professions (Hill, 2002). The mission of the International Baccalaureate (IB) programme is to "create a better and more peaceful world through intercultural understanding and respect" (IBO, 2011a). IB proponents contend that the concept of *globalization* ought to be integrated into a school's daily curriculum; thus, the IB programme has made *global citizenship* a key component of its students' education (Stewart, 2007). Currently more than 967,000 IB students attend 3,300 schools in 141 countries (IBO, 2011a).

The first IB school authorized in the United States opened in 1971. Today, the IB programme in the U.S. is growing at a rapid rate, with more than one-half of the world's IB students who take the IB Diploma Programme (IBDP) examination based in the U.S. (Bunnell, 2011b). In recent years in particular, there has been dramatic growth in the number of schools in the U.S. that have implemented the IB programme (Bunnell, 2011a, 2011b; Conner, 2008). Over the 10-year period from 1999-2009, the number of IB schools in the U.S. increased at an average rate of 73 schools per year (Bunnell, 2011b), and the total number of IB schools has more than doubled in the last five years (Bunnell, 2011a; Cech, 2007). In the U.S., there are currently 1,308 IB schools; the majority of the programmes are DP (n=753), but 448 are Middle Years Programme (MYP) and 292 are Primary Years Programme (PYP). About 90% of IB schools in the U.S. are public, with about 30% receiving Title I funding (i.e., financial assistance to local educational agencies and schools with high percentages of children from low-income families; U.S. Department of Education, 2011).

Schools wishing to become an International Baccalaureate (IB) World School undergo a rigorous authorization process in which school personnel complete application documents, create strategic programme plans, participate in extensive training, and host IB-appointed panels for school site visits. In spite of the intensive authorization process, the number of IB World Schools and students enrolled in those schools has increased dramatically over the past decade.

The DP was designed for high school students, with a goal of providing an international education that promotes an "understanding and appreciation of other cultures, languages, and points of view" (IBO, 2011b). The idea was that the IB curriculum could be translated to and implemented in any international school. Considering its background, it is interesting to note that the IBDP has become especially popular in many low-income urban schools (Connor, 2008). Moreover, many universities accept the IB diploma for university course credit.

IBO created the MYP for 11- to 16-year-old students in 1994, and in 1997 added the PYP for 3- to 11-year-olds. The mission of all three IB programmes is to "encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right" (IBO, 2011d). In the MYP, five interdisciplinary perspectives are addressed in various subject areas: approaches to learning, health and social education, community service, environment, and human ingenuity. Serving as a framework for the entire MYP are the ideas of holistic learning, intercultural awareness, and good communication and critical thinking skills. In May 2012 this transdisciplinary approach was practiced in 945 schools in 78 countries (Hill, 2012). The PYP also takes a holistic approach towards the education of young children, considering both the inside and outside of the classroom. Although a child's cognitive outcomes are unquestionably at the heart of the PYP, the social, physical, emotional, and cultural needs of children are also important (Chmelynski, 2005). Additionally, PYPs go a step beyond the classroom and into alternate societal viewpoints, incorporating the personal issues of *perspective*, *responsibility*, and *reflection* (Singh, 2002). Furthermore, all PYPs instruct students in an additional language, encouraging children to become students of the world.

This inquiry-based, multi-disciplinary emphasis of IB programmes was, in fact, one of the models on which the U.S. national education standards and common core were based, thereby drawing recent attention to IB (Sparks, 2013). IB schools focus on teaching critical thinking skills and tend to assess students using approaches such as writing research papers and giving oral presentations, rather than assessing students with the typical multiple-choice testing method used by many non-IB schools (Cech, 2007). An IB PYP school in Colorado, for example, incorporated its students' family histories for the purpose of teaching and assessing a unit on migration patterns (Singh, 2002). Additionally, an IB school in Florida integrated the *Teaching for Understanding* framework, a constructivist approach to learning, with a focus on student inquiry and individualizing the learning environment (Graffam, 2003).

Research on IB Schools

Although there has been a dramatic increase in the number of schools implementing IB, limited research has emerged about the IB programme; and a substantial segment of the research literature regarding IB schools addresses current and former students' perceptions of the program. Taylor and Porath (2006) conducted a survey study looking at the perspectives of recent IB programme graduates. When asked, 94% of IB programme graduates felt that they had learned to think critically and flexibly as a result of their enrollment in the IB programme. Additionally, 88% of IB programme graduates considered themselves to be more prepared for their introductory post-secondary courses than did other, non-IB programme high school graduates. The findings of this study are

supported by other studies (Culross & Tarver, 2011; Tarc & Beatty, 2012), in which both current and former students of the IB indicated that their experiences in the program led to increased depth and breadth of knowledge, strong critical thinking skills, good study habits and time management skills, and better written and oral communication skills. Teachers also have responded positively regarding their perceptions of the IBDP, identifying a focus on global issues, higher level thinking skills, and a broad range of topics as strengths of the program (Culross & Tarver, 2011). Although teachers in this study felt that teaching in the IB program required significantly more preparation for them, they believed that participation in the program had improved their teaching skills.

Some studies have documented higher SAT scores, college acceptance rates, college completion rates, and college GPAs for current and prior IB Diploma Programme students than for the general student population (IBO, 2003). Culross and Tarver (2011), for example, found that top colleges and universities actively recruit students with an IB Diploma, perceiving the degree as an indicator of a student's likelihood of postsecondary success. Burris et al. (2007) conducted a study of former students who had completed IB English and IB mathematics classes in Rockville Centre, NY. The researchers found that taking IB mathematics and IB English was strongly associated with completing college in 4 years: Of those students who had taken both courses, 88% graduated from college in 4 years, while only 32% of those who took neither course graduated in 4 years. Other researchers (Daniel & Cox, 1992; Grexa, 1988) who examined post-secondary data for IB graduates have found that they experienced higher grade point averages than non-IB students, as well as higher post-secondary graduation rates (Caspary, 2011). Recently, 36 of the top 100 schools in Newsweek's *America's Best High Schools* were IB schools (IBO, 2009).

A limited number of studies have examined the efficacy of the PYP and the MYP and the value that these specific programmes add to teaching and students' education. A notable exception to this dearth of research focusing on younger students in IB programmes is a group of studies conducted by a Colorado school district. These longitudinal studies found that student participation in a PYP and MYP had a small positive effect on reading and mathematics achievement outcomes (Kiplinger, 2005a, 2005b). Although selection effects need to be considered in understanding the Colorado school district's PYP and MYP outcomes, a follow-up case study of the school district's IB programmes considered the extent to which the unique attributes of the IB programme contributed to these positive outcomes (Rose, 2007). Findings from this qualitative study concluded that the IB programmes' focus on critical inquiry, student agency in learning, and instructional consistency across grades and programmes appeared to contribute to the success of students in the school district's IB programmes.

Few researchers, however, have specifically examined the important instructional aspects of the IB programme As previously described, the IB programme is unlike other programs, due to its multi-disciplinary approach and its emphasis on developing students' perspective, responsibility, and reflection. The present study addressed the following research questions: (a) What does classroom instruction and students' behavior within Texas PYP and MYP IB schools look like? and (b) How can systematic classroom observation—along with the simultaneous use of three observation instruments that examine instruction from multiple perspectives—be used as an evaluative method?

Methods

Participants

A total of eight schools (i.e., cases)—four PYP (Fannin Elementary, Juan Seguin Elementary, Richard Coke Elementary, Wheatley Elementary [pseudonyms]) and four MYP (Ace Academy, Bowie Academy, Kennedy Academy, William P. Hobby [pseudonyms])—were carefully selected for inclusion in the current study. Not only did these eight schools meet the IB criteria of the study (e.g., IB schools in Texas), but also school demographics and geographical areas were key factors in case selection (e.g., percentages of economically disadvantaged students, percentages of limited English proficient students, student socioeconomic statuses and ethnicities). Furthermore, researchers wanted a representative sample of the types of schools that were implementing the PYP and MYP programmes in the state of Texas. About two-thirds of the students from the eight schools were either African American or Hispanic/Latino. In addition, over one-half of the students were classified as economically disadvantaged (i.e., enrolled in free or reduced lunch programs).

For the most part, the four PYP schools chosen for this study were racially and ethnically diverse. Richard Coke Elementary was the only school with a White majority population and the only school with a relatively small proportion of its students identified as economically disadvantaged by the state. The four MYP schools chosen for this study are also racially and ethnically diverse. None of the schools has a White majority population. Hobby, with a 6-year average White population of slightly over 21%, had the largest percentage of White students. Two schools were selected from the Rio Grande Valley of Texas, two from the northeast area of the state, and four from the state's mid-southeast region. Three of the four schools from mid-southeast Texas were chosen because they represented a feeder pattern of elementary, intermediate, and middle schools.

Approximately 10 teachers from each school were randomly selected and observed (n=85); and in most

schools, 2-3 students from each classroom were randomly selected and observed (*n*=175), stratifying student selection by both sex and ethnicity. Two schools in the sample allowed researchers to observe teachers and classrooms but did not allow researchers to observe students in the classroom.

Instruments. Three observational instruments were specifically developed for this study: the *Classroom Observation Schedule for IB Schools (COS-IBS)*, the *Teacher Roles Observation Schedule for IB Schools* (*TROS-IBS*), and the *Overall Observation of Features for International Baccalaureate Programme* (*OFIBP*). The tools were based on IB programme features, as well as on previous classroom observation research (Waxman, 2003; Waxman & Padrón, 2004; Waxman, Hilberg, & Tharp, 2004). The COS-IBS was designed to systematically obtain information on students' classroom behaviors. It was adapted from the *Student Behavior Observation Schedule* (Waxman, Wang, Lindvall, & Anderson, 1988) and was used to document observed student behaviors in the context of ongoing classroom instructional-learning processes. Individual students were observed with reference to: (a) the type and purpose of their interactions with teachers or other students, (b) whether teachers or students had an opportunity to choose or select the classroom activity, (c) the type of activity on which the student was working, (d) the setting in which the observed behavior occurred, (e) whether the student was on- or off-task, and (f) whether the student language was either English, Spanish, or a combination of both (in several instances, Spanish was utilized by both teachers and students for instructional clarification). Approximately three students were observed in each classroom for ten 30-second intervals during each 40-minute data collection period.

The TROS-IBS was designed to systematically obtain information on teachers' classroom behaviors. It was adapted from the *Teacher Roles Observation Schedule* (TROS) (Waxman, Wang, Lindvall, & Anderson, 1990) and is a systematic observation schedule designed to document observed teacher behaviors in the context of ongoing classroom instructional-learning processes. Teachers were observed with reference to: (a) their interactions with students, (b) the instructional setting in which an observed behavior occurred, (c) the language used, (d) the purpose of the interaction, (e) the nature of the interaction, and (f) teachers' instructional practices. Each teacher was observed for 10 30-second intervals during each data collection period.

The OFIBP was used to examine the extent to which (a) teachers' general instructional practices, (b) student behaviors and activities, and (c) features of IB programme instruction and the IB trans-disciplinary themes of global significance (e.g., who we are, where we are, how we express ourselves) were observed in the IB classrooms. The OFIBP was adapted from the *Classroom Observation Measure (COM)* (Ross & Smith, 1996), which measures the extent to which certain effective instructional strategies are demonstrated during a class period. The COM has been used in a number of studies and found to be reliable and valid (Ross, Smith, Lohr, & McNelis, 1994; Ross et al., 1997). The COM has been adapted and used in many recent studies (Waxman, Padrón, Franco-Fuenmayor, & Huang, 2009).

The OFIBP was used at the end of the class observation to measure, on a 3-point scale (1=*none*, 2=*some*, and 3=*extensive*), the extent to which certain instructional processes were observed during a class period. Some of the IB programme indicators that were included on the instrument were (a) lesson began with what students already know from home, community, and school; (b) teacher provided opportunities for students to assume responsibility and initiate classroom activities; (c) teacher assisted students in connecting and applying their learning to home and community; (d) teacher varied styles of conversation and participation to include students' cultural preferences; (e) teacher varied activities to include students' preferences; and (f) teachers provided opportunities for students to learn about their global environment.

Another important component of the OFIBP was that it allowed observers to record field notes at the classroom and school level. This aspect of the OFIBP was similar to other recent teacher observation instruments that incorporated both qualitative and quantitative data, which provide rich, detailed, meaning-centered accounts (Knight & Smith, 2004; Waxman et al., 2004).

Procedure

Detailed descriptions and operational definitions of the categorical variables listed under the main constructs used in the classroom observation instruments were developed into a manual that was used to train observers. Observers were required to read the manual in its entirety before beginning the training sessions. They also reviewed the manual prior to their initial observations. Five experienced university faculty members and doctoral students from a college of education at a major research university within the state of Texas conducted the observations. All observers had extensive training on the instruments during piloted professional development sessions. For the present study, the inter-observers' agreements (Cohen's kappa) were excellent: The inter-observer reliability coefficient was .93 for the TROS-IBS, .95 for the COS-IBS, and .86 for the OFIBP.

The trained researchers observed reading/language arts or mathematics classes in eight selected IB schools during fall 2009. Teachers were notified of the specific day when observers would be in their schools; however, they were not told the exact time an observer would visit the class. Arrangements were made to observe regular classroom instruction, so that

classes devoted to special activities (e.g., standardized testing, laboratories, etc.) were avoided. Each student and teacher was observed for approximately 10 intervals during the 40-minute data collection period. At the end of each observation, the OFIBP was completed.

Results

Table 1 displays the overall descriptive results from the TROS-IBS, indicating the percentages of time that teachers were observed on the instructional variables measured. Teachers were observed *interacting* with students on instructional activities about 68% of the time, and they were observed interacting with students on managerial issues about 14% of the time. Teachers were only observed not interacting with students about 11% of the time. Whole-class instruction was the most prevalent *instructional setting* (62%), followed by small-group instruction (15%), and individualized setting (12%).

In terms of *instructional practices*, teachers were observed using verbal representations about 33% of the time, followed by using concrete models (15%), using

Table 1
Overall Mean Percentages and Standard Deviations from Teacher Observations (n=85)

Teacher Interaction	*M*	*SD*
No interaction	10.80	20.43
With student(s), instructional	68.39	31.95
With student(s), managerial	13.73	20.85
With student(s), social/personal	1.00	4.28
With student(s), collaborative	3.91	11.09
Other	1.59	9.07
Setting	***M***	***SD***
Whole class instruction	62.38	35.85
Small group instruction (more than one student)	15.04	27.04
Individual	12.04	25.37
Traveling	6.19	15.25
Other	2.52	12.12
Instructional Practices	***M***	***SD***
Uses concrete models	15.32	28.94
Uses pictorial representations	13.18	26.38
Uses verbal (oral or written) representations	32.90	39.48
Uses tabular or graphical representations	6.69	27.79
Uses symbolic or numeric representations	8.37	23.95
Uses area models	0.62	4.16
Uses linear models	1.68	11.76

Uses technology to present material	14.00	29.89
Nature of Interaction	*M*	*SD*
Questioning (Process)	23.43	30.97
Questioning (Content)	39.93	30.95
Explaining	45.52	27.86
Commenting (e.g., general discussion about sports)	8.41	14.54
Listening	19.49	44.58
Cueing or prompting	21.19	22.36
Modeling/Demonstrating	11.15	19.59
Other (specify)	4.26	14.29
Purpose of Interaction	*M*	*SD*
Focus on content (i.e., subject area content)	53.99	31.74
Focus on process	30.78	32.83
Focus on product (e.g., outcome)	20.45	26.47
Connect content to other disciplines	7.18	14.93
Connect content to global communities	11.20	21.82
Present multiple perspectives on topic	7.33	15.17
Redirect student thinking	15.62	20.17
Show interest in student work	14.76	21.45
Show personal regard for student	5.05	11.85
Encourage students to help each other	5.43	13.61
Encourage students to succeed	8.57	17.77
Encourage students to question	3.02	8.26
Encourage extended student responses	14.40	20.58
Encourage student self-management	6.37	13.87
Praise student behavior	6.64	14.62
Praise student performance	14.57	23.26
Correct student behavior	12.69	18.19

Correct student performance	6.72	17.69
Other	2.89	13.07
Language Used	*M*	*SD*
English	89.06	28.48
Spanish	13.84	32.85

Source. TROS-IBS.

Table 2
Overall Mean Percentages and Standard Deviations from Student Observations (n=175)

Student Interaction	*M*	*SD*
No interaction	64.97	36.45
With teacher, instructional	13.67	23.21
With teacher, managerial	0.54	3.57
With support staff	0.34	2.60
With other student(s), instructional	17.39	30.04
With other student(s), social/personal	3.32	10.41
Setting	*M*	*SD*
Whole class instruction	56.56	41.09
Small group instruction (more than one student)	24.19	35.24
Individual	18.45	33.04
Manner	*M*	*SD*
On-task	86.93	23.35
Waiting for teacher	3.54	13.66
Distracted	6.97	14.35
Disruptive	0.13	1.21
Other	0.29	3.78
Activity Types	*M*	*SD*
Working on written assignments	27.69	34.47

Interacting/instructional (e.g., discussing)	11.41	23.27
Sharing thinking/learning processes with peer (process, solution, etc.)	3.07	12.49
Participating in student-led discussions/activity	1.49	9.74
Reading content-related texts	5.67	19.46
Getting/returning materials	1.59	6.47
Painting/drawing/creating graphics/coloring	8.53	24.38
Working with technology to learn basic skills (e.g., drill and practice)	0.38	3.55
Working with technology to learn 21st century skills (e.g., problem solving)	2.23	14.63
Playing content-related games	1.00	9.42
Presenting/acting	1.24	7.37
Experiential/hands-on learning	10.80	26.00
Tutoring/explaining things to peers	0.14	1.89
Working kinesthetically	1.69	7.12
Answering teacher-posed questions	12.95	21.09
Answering peer-posed questions	1.11	6.37
Presenting own questions	1.13	6.58
Answering own questions	0.29	3.78
Relating learning to other disciplines	1.57	8.95
Reflecting on learning	1.41	10.37
Planning action based on learning	0.43	5.67
Listening/watching	39.25	38.26
Not attending to task	5.21	14.04
No activity/transition	4.03	13.26
Other	0.61	4.97
Content	*M*	*SD*
Working with concrete model (e.g., manipulatives)	10.13	27.84
Working with pictorial representation (e.g., pictures of quantities)	11.14	27.03
Working with verbal representation (e.g., use of words)	20.40	36.78

Working with symbolic or numeric representation (e.g., algorithms)	5.69	19.79
Working with tabular or graphical representation (e.g., tables/graphs)	11.35	27.65
Using area models (e.g., colored tiles)	0.57	7.56
Verbalizing solution process (e.g., student think-aloud)	0.66	5.17
Working on basic skills (e.g., 2+2=4)	3.01	13.05
Working on problem solving	7.68	23.33
Language Used	*M*	*SD*
English	94.28	21.28
Spanish	6.81	23.55

Source. COS-IBS.

technology (14%), and using pictorial representations (13%). Explaining (46%) was the most prevalent *nature of interaction* observed, followed by questioning about content (40%), questioning about process (23%), and cueing or prompting (21%). The most prevalent purpose of interaction was focusing on content (54%), followed by focusing on the learning process (31%) and focusing on the product or outcome (20%). With regard to *instructional language used*, English was spoken 89% of the time, and Spanish was spoken 14% of the time.
Standard deviations for nearly all the items on the TROS-IBS were large, indicating great variance on the degree to which teachers were observed on these items.

Table 2 displays the descriptive results from the COS-IBS, indicating the percentages of time that students were observed on the instructional variables measured. Students were observed *interacting* with the teacher on instructional activities 14% of the time. They were observed interacting with other students on instructional activities about 17% of the time. Students were observed not interacting about 65% of the time. The most prevalent *instructional setting* was whole-class instruction (57%), followed by small-group instruction (24%) and individualized work (18%). With regard to their *manner*, students were observed on-task about 86% of the time.

The predominant student *activity type* was listening and watching (39%), followed by working on written assignments (28%), answering teacher-posed questions (13%), interacting (11%), and doing experiential, hands-on activities (11%). The most prevalently observed content was working with verbal representations (20%), working with graphical representations (11%), working with pictorial representations (11%), and working with concrete models (10%). Concerning *language used*, students spoke English 94% of the time and Spanish 7% of the time.

Standard deviations for nearly all the items on the TROS-IBS were large, indicating great variance on the degree to which students were observed on these items.

Table 3 displays the mean values for the teacher, student, and IB programme items by school and the overall means values from the OFIBP. For purposes of these analyses, a 3-point scale was used, with 1=*not observed at all*, 2=*observed to some extent* (once or twice), and 3=*observed to a great extent* (three or more times). The results for the general *instructional practice* variables revealed that instruction in most of the schools was active, with teachers often engaging students, exploring new skills and key concepts, explaining, elaborating, and evaluating. The highest overall mean value was teachers provided feedback, followed by teachers were engaged. The third highest mean value was teachers initiated experiences, discussions, and activities. Most teachers were also observed connecting ideas and concepts, allowing students to develop concepts or procedures, providing feedback, and distributing feedback evenly to all students. The behaviors that were not extensively observed included teachers providing students with options for problem solving, teachers assisting students in generalizing learning to other situations, and teachers integrating technology into the lesson.

Teachers at Coke, Wheatley, and Fannin were observed exploring more with students than were teachers at other schools. Teachers at Coke and Wheatley were also observed elaborating more than were teachers at the other schools. Teachers at Coke and Hobby were observed acting as a coach or facilitator more than were teachers at the other schools. Finally, teachers at Hobby were observed integrating feedback and assessment into the instructional cycle more than were teachers at the other schools. Overall, teachers at Coke and Wheatley

were observed using more effective instructional practices, while teachers at Ace, Seguin, and Bowie were observed using fewer effective instructional practices.

The results for the *student behaviors* and activities displayed in Table 3 showed that students were observed to a great extent as engaged in classroom activities. The next highest indicator was students connected ideas and concepts. Students were also observed to some extent initiating and assuming responsibility for experiences, discussions, and activities; connecting ideas and concepts; and participating in learner-centered activities. Students were not often observed demonstrating meta-cognitive strategies, utilizing different ways to answer, participating in problem solving, using technology to learn 21st century skills, and using technology to learn basic skills.

Students at Coke were observed using meta-cognitive skills more than were students at the other schools, and students at Wheatley were observed more frequently using different ways to answer than were students at the other schools. Overall, students at Coke and Hobby were observed using more effective student behaviors and activities, while teachers at Ace, Seguin, Kennedy, and Bowie were observed using fewer effective student behaviors and activities.

The results for the IB programme features and *transdisciplinary themes* reported in Table 3 revealed that most of these IB programme features and themes were not observed. To some extent, teachers provided opportunities for students to assume responsibility and initiate classroom activities, and teachers varied activities to include student preferences. The highest indicators were (a) teacher provided opportunities for students to assume responsibility and initiate classroom activities and (b) lesson began with what students already know from home, community, and school. Very few of the IB programme features and transdisciplinary themes were observed in the schools.

Table 3
Overall Mean Percentages and Standard Deviations from Classroom Behaviors of IB Schools (n=85)

Instructional Practices	*M*	*SD*
Teacher engaged	2.47	.62
Teacher explored	2.13	.74
Teacher explained	2.37	.64
Teacher elaborated	1.98	.75
Teacher evaluated	2.31	.66
Teacher connected ideas and concepts	2.22	.63
Teacher initiated experiences, discussions, and activities	2.44	.69
Teacher acted as coach/facilitator	2.11	.79
Teacher allowed students to develop concepts or procedures	2.06	.71
Teacher provided students options for problem solving	1.64	.69
Teacher provided feedback (i.e., answers, information, etc.)	2.50	.59
Teacher assisted students to organize thinking	2.07	.73
Teacher assisted students generalize learning to other situations, problems, etc.	1.89	.76
Teacher integrated technology into lesson	1.55	.81
Teacher integrated feedback and assessment into instructional cycle	2.16	.73

Teacher distributed feedback evenly	2.29	.69
Teacher redirected student thinking	1.89	.76
Lesson began with what students already know from home, community, and school	1.69	.76
Teacher provided opportunities for students to assume responsibility and initiate classroom activities	1.96	.78
Teacher assisted students in connecting and applying their learning to home and community	1.54	.71
Teacher provided opportunities for parents/families to participate in instructional activities	1.06	.31
Teacher varied activities to include students' preferences	1.61	.76
Teacher varied styles of conversation and participation to include students' cultural preferences	1.41	.70
Teacher provided opportunities for students to learn about their global environment	1.54	.75
Teacher provided opportunities for students to learn about physical, social, and emotional health	1.16	.45
Teacher provided opportunities for students to develop creativity	1.49	.72
Student Behaviors	*M*	*SD*
Students initiated and assumed responsibility for experiences, discussions, and activities	1.98	.75
Students connected ideas and concepts	2.18	.55
Students demonstrated meta-cognitive strategies	1.47	.66
Students utilized different ways to answer	1.51	.69
Students participated in problem solving	1.67	.75
Students used technology to learn 21st century skills	1.17	.52
Students used technology to learn basic skills	1.27	.60
Students were engaged in classroom activities	2.44	.64
Student activities were learner-centered	2.13	.72
IB Transdiciplinary Themes	*M*	*SD*
Who we are	1.39	.73
Where we are in place and time	1.35	.71

How we express ourselves	1.36	.71
How the world works	1.30	.63
How we organize ourselves	1.21	.53
Sharing the planet	1.10	.34

Source. OFIBP.
Note. 3-point rating scale was used, with 1=*not observed at all*, 2=*observed to some extent* (once or twice), and 3=*observed to a great extent* (three or more times).

Teachers at Hobby were observed varying styles of conversation and participation to include students' cultural preferences and using the themes "how we express ourselves" and "how the world works" more than were teachers at the other schools. Overall, teachers from Hobby were the only teachers observed to some extent incorporating IB programme features and themes.

Discussion

When considering the research question, *what does classroom instruction and students' behavior within Texas PYP and MYP IB schools look like*, systematic classroom observations of 85 classrooms revealed that instruction in most of the schools was active, with teachers often engaging students, exploring new skills and key concepts, explaining, elaborating, and evaluating. Overall, the general instructional practices and student behaviors/activities observed were favorable and were higher than those found in similar classrooms in Texas schools (Waxman & Padrón, 2004; Waxman, Padrón, Franco-Fuenmayor, & Huang, 2009). The amount of time that students were observed being *on-task* (87%), for example, was dramatically higher than the amount of student on-task time (73%) observed in a similar study examining fourth- and fifth-grade classrooms in Texas elementary schools (Waxman et al., 2009). Students were systematically observed and coded as being on-task when they appeared to be engaged in classroom activities and/or were attending to classroom instruction and activities. Other aspects of the overall quality of instruction observed in IB schools were also found to be more favorable than the quality of instruction in similar schools in Texas. Teachers in the present study, for example, were observed using more questioning, modeling, and cueing/prompting than teachers observed in similar studies (Waxman et al., 2009).

To a great extent, students in IB classrooms were observed as engaged in activities. They were also observed to some extent initiating and assuming responsibility for experiences, discussions, and activities; connecting ideas and concepts; and participating in learner-centered activities. Conversely, students were not often observed demonstrating meta-cognitive strategies, utilizing different ways to answer, participating in problem solving, using technology to learn 21st century skills, and using technology to learn basic skills. Most IB themes were not directly observed. The most-observed IB indicators were (a) provide opportunities for students to assume responsibility and initiate classroom activities and (b) lesson began with what students already know from home, community, and school. Overall, Hobby was the one school observed implementing IB features and themes to some extent. These findings should be viewed cautiously, however, since they were based on a limited number of observations at each school.

The present study highlights the importance of systematic observation as an evaluative method. The use of the observational instruments provided reliable, quantifiable data that accurately described the degree of programme implementation and overall effectiveness of the programme. The results were also examined for grade-level differences, which provided valuable feedback to the programme developers and to the IB trainers. That is, the findings from the present evaluation suggest that the use of systematic observation can inform developers and trainers about ways to improve their decisions regarding professional development and implementation of the IB programme.

The research question, *how can systematic classroom observation—along with the simultaneous use of three observation instruments that examine instruction from multiple perspectives—be used as an evaluative method* was addressed via the three observation instruments used in the present study, which illustrated the importance of examining instruction from multiple perspectives. Other instruments and/or observation methods observation could possibly reveal different aspects of classroom instruction that were not highlighted in the current study. More qualitative observational approaches to classroom instruction could also contribute to a more comprehensive perspective of what occurs during instruction in IB classrooms. Further observational research on IB schools is needed to explore how these instructional behaviors are related to students' cognitive and affective outcomes. More theoretical, conceptual,

and empirical work is also needed to examine how IB practices can improve the quality of education for all students. It may be important, for example, to examine how the concepts of the IB programme relate to emergent research on technology-supported learning (Reimann & Aditmo, 2013) and teaching and learning with technology (Lee, Waxman, Wu, Michko, & Linn, 2013).

In summary, students in the IB schools observed in the current study were beneficiaries of the opportunity to develop critical thinking skills from an intercultural perspective, as well as to learn in active, engaging classrooms. Additionally, IB students, to some extent, initiated and assumed responsibility for experiences, discussions, and activities; connected ideas and concepts; and participated in learner-centered activities. Moreover, teachers at the IB schools explored with their students, acted as coaches/facilitators, and integrated feedback and assessment into the instructional cycle. Taken as a whole, it was clear that many affective domain factors were evident in the IB schools.

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