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Characteristics of Schools' Efforts to Implement the Integrated Elementary and Junior High School Curriculum

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The purpose of this study was to identify the characteristics of the efforts in compulsory public education schools that innovated to solve problems by continuing to implement curriculum reforms in municipalities, even under the COVID-19 circumstances. Using the results of a cross-sectional design survey to evaluate the implementation of the integrated e lementary and junior high school curriculum for City A in Japan, we clarified junior high school districts that maintained positive practices, even during the pandemic. As a result, we discovered that those junior high school districts with positive practices conducted an evidence-informed teaching practice, that focused on agency. They were conscious of receiving comments and cooperating with other schools to improve the integrated elementary and junior high school education curriculum and student activities, to generate ideas for better practice by using ICT, rather than being conscious of verifying the effects.

Keywords: Teacher Agency, Student Agency, Leadership, ICT Use, COVID-19

Introduction

International research trends, including reports from the Organization for Economic Cooperation and Development (OECD) research groups, have focused on teacher agency, student agency, and co-agency in schools that can cope with educational change and education for the future in unpredictable times. The OECD describes digital literacy and data literacy as important for students to demonstrate their agency. Phase II of the OECD focuses on teacher competencies and teacher profiles that contribute to all students reaching their potential, stating that teachers are the key to the effective implementation of the curriculum. OECD states that the focus of concept creation would shift from "learning for 2030" to "teaching for 2030." Curriculum analysis should shift the focus from "curriculum redesign" to "curriculum implementation. The importance of promoting international surveys to gather information on school practices and curriculum implementation while listening to various voices must be noted. (OECD 2019; OECD 2020). This can be interpreted as necessitating a greater focus on curriculum implementation in schools.

However, it is often unclear in what kind of learning environment and in what kind of curriculum management the teacher-student agency is demonstrated. Therefore, the purpose of this study is to identify the characteristics of the efforts made by schools that innovated to solve problems by continuing to implement curriculum reforms in the municipalities even under the circumstances of COVID-19. Thus, this paper will focus on identifying the role of leadership and the use of information and communications technology (ICT) in schools where teachers and students actively participate in curriculum management and seek to construct learning activities and design school life in creative ways to achieve their goals in their schools and communities.

In this study, we primarily focus on compulsory education initiatives, which are considered to have significance as the foundation of schooling in any country. We also pay attention to the actual efforts of the schools in the curriculum reform efforts of the local board of education, which is responsible for the city's educational administration.
However, if, as Phase 2 of OECD 2030 states, curriculum analysis should shift the focus from "curriculum redesign" to "curriculum implementation," specific examples need to be addressed.
For this reason, we decided to turn to the Japanese case of curriculum reform by local boards of education and schools for compulsory education.

In Japan, nine years of compulsory education, consisting of six years of elementary school and three years of junior high school, is stipulated by law, and in the case of public schools, the local board of education has the responsibility for supervision. Many local boards of education in Japan have been concerned about the increasing number of children who are not attending school as they move from elementary school to junior high school and have adopted educational policies to strengthen the linkage between elementary and junior high schools. Since 2005, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) has also begun to focus on addressing this issue and has turned its attention to and supported the National Liaison Council and National Summit on Integrated Elementary and Secondary Education, which is organized by local boards of education.

Local city A in Japan has 15 junior high school districts, which include 15 junior high schools and 28 primary schools. The local Board of Education in City A has begun deploying integrated education for elementary and junior high schools throughout the city since 2018.

Even in the midst of a wave of administration-driven education reform and pandemics like COVID-19, what is being done in schools that are rated relatively positively by teachers and students alike within the same city school cluster? In this study, we decided to focus our attention on this question.

In addition, as mentioned earlier, the OECD looks at teacher and student agency in the implementation of the curriculum. Agency is not an easy concept to explain, as its meaning varies from broad to narrow and has been historically much debated (Stanford Encyclopedia of Philosophy, 2019). However, the agency that this paper addresses implies the intentional acts that take place in relation to their environment and others, and the constantly changing actors and environment in which they take place. This paper discusses the agency of teachers and students, which is often the focus of educational reform and problem solving through curriculum management in unpredictable times, and the educational environment that makes this possible.

We formulated our research questions as follows:

1) In the curriculum reforms that City A continued to promote, even in a pandemic like COVID-19, which initiatives were evaluated positively by teachers and students for their efforts?
2) What kind of teacher and student agency can be identified in junior high school districts in City A where teachers and students are showing positive attitudes toward the reform of the integrated elementary and junior high school curriculum?
3) What has been done in the junior high school districts in City A that positively promotes or demonstrates teacher and student agency in curriculum reform? What was being done in terms of leadership, use of ICT, and other learning environments mentioned in the literature review?

Literature Review

Since 2015, there have been many studies on teacher agency, and there have been more research papers on student agency since 2020. We searched for peer-reviewed papers that included "teacher agency" or "student agency" in the abstract of the paper, by using Education Resources Information Center (ERIC). However, few studies have focused on elementary or secondary education. Those which did, included professional autonomy, teacher attitudes, teacher role, educational change, educational policy, educational environment, professional development, teacher collaboration, professional identity, and school culture as keywords. For instance, Yıldız and Göçen (2022) examined teachers' opinions on leadership, and suggested guidelines for teachers' behavior to survive in unpredictable times to explain what teachers should do in response to the new normal. Other articles on teacher agency often dealt with the interaction between the teacher and the environment (Deschênes & Parent, 2022, Varpanen et al., 2022). Studies that seek to understand teacher agency through teacher-environment interactions refer to an ecological approach (Biesta et al., 2015; Imants & Van der Wal, 2020; Leijen et al., 2020; Priestley et al., 2015).

Articles on student agency in elementary and secondary education included keywords like student attitudes, personal autonomy, student empowerment, teacher-student relationships, learner engagement, student experiences, educational technology, and social justice. Many of them explained why attention should be paid to student agency, student autonomy, and student participation in school activities and social engagement, and provided examples of relevant practices (Hethrington, 2015; Nikolaidis, 2018; Vaughn, 2020).

Many articles post-2020 explained the implications of technology, in connection with Covid-19, to demonstrate student agency and gave examples of such implementation (Stenalt, 2021). Yanoski et al. (2021) and White et al. (2022) showed how the ICT environment can contribute to the safety and security of students, and not halt the learning process. They identified what was required of schools, administrators and teachers, and what responses have been effective in reducing disparities in a region. Burgin et al. (2022) pointed out the importance of looking at student engagement in distance learning and improving teaching through learner needs and voice. Naff et al. (2022) found that the home environment, socioeconomic status, and mental health history or disability diagnosis have an impact on the mental health status of PK-12 students, while addressing the effects of Covid-19. It has also been pointed out that school administrators should listen to children and teachers to ensure their well-being, show empathy to their emotions, and be active in advancing policies for teachers on how to respond to crisis situations (Farhadi & Winton, 2022; Kwatubana & Molaodi, 2021; Wilson et al., 2020; Wilson, 2021).

The above-mentioned articles on teacher/student agency and schools' approaches to Covid-19 have made us aware of what schools and teachers have always taken for granted. They not only made us think about how to respond to the problems that COVID-19 brings to schools, but also made us look back at the rules and practices of school administration that we had not been aware of. These studies also described the implications of teachers' leadership, children's proactive participation, and teacher and student agency for school administration and educational policymaking (York-Barr & Duke, 2004; Oolbekkink-Marchand et al., 2017; Zeiser et al., 2018; Imants & Van der Wal, 2020). When trying to understand how leadership can support school initiatives, it is relevant to also consider the results of previous studies that have analyzed school practices in a bottom-up manner, such as research-based practices, research-informed practices, and the use of professional learning networks (Brown et al., 2017; Brushwood & Bimm, 2021; Chung, 2023; Nelson & Campbell, 2017).

However, studies that examine curriculum management and initiatives in relation to the voices of teachers and students, while also examining experiences such as COVID-19, in the context of junior high school districts that provide integrated elementary and junior high school education at the municipal public compulsory education level were rare among the relevant articles identified in the above ERIC. in this study, we aim to address these research gaps by focusing on a case in Japan, guided by our research purpose and questions.

Research Methods

Research procedures and data collection

Local city A in Japan has both mountainous and urban areas. It has 15 junior high school districts, which include 15 junior high schools and 28 primary schools. The local Board of Education in City A has begun deploying integrated education for elementary and junior high schools throughout the city since 2018. City A has data and materials that are actively being recorded, allowing us to analyze changes from its efforts prior to the impact of COVID-19. We requested their cooperation because we believed that, as a local city in Japan, the location of its schools was unbiased and representative.

All study participants provided informed consent and the study design was approved by the appropriate ethics review board. Table 1 shows the participants in this study.

Table 1

Survey participants (number of teachers and students in grades 5-7 per junior high school district)

	Teacher Participants (Number of valid responses)				Student Participants (Number of valid responses)					
					Group 1			Group 2		
	2018	2019	2020	2021	2018 5year	2019 6year	2020 7year	2019 5year	2020 6year	2021 7year
A School District	54	55	50	52	54	53	45	47	46	38
B School District	36	40	45	43	36	36	36	51	51	47
C School District	105	107	100	87	190	186	165	184	182	160
D School District	87	84	85	77	174	176	159	191	197	169
E School District	97	94	94	92	196	195	169	212	215	186
F School District	85	94	99	98	193	193	179	179	182	193
G School District	99	102	103	94	183	183	158	167	166	140
H School District	72	77	75	63	143	149	137	154	154	130
I School District	91	96	87	91	177	186	161	152	151	131
J School District	82	87	70	51	127	129	111	139	137	121
K School District	75	80	82	78	150	150	133	135	139	115
L School District	73	77	93	86	126	121	111	111	104	82
M School District	102	113	114	109	221	221	161	196	201	188
N School District	64	67	74	60	106	110	96	125	128	114
O School District	73	82	79	80	146	143	121	196	168	102

This study employed a cross-sectional questionnaire survey design and was conducted in City A. We investigated elementary school students' anxiety about transitioning to junior high school, and their interest and satisfaction in integrated elementary and junior high school curriculum before and during COVID-19. We also investigated how teachers felt about such efforts and the professional training offered for that purpose. We compared and analyzed 15 school districts using the results of a questionnaire survey distributed to teachers and students.

The survey was conducted annually in December, from 2019 to 2021, after a one-year preparation period in 2018. In other words, it was conducted four times over a four-year period. The students were asked to participate for three consecutive years.

Approximately 1,270 teachers (approximately 840 from elementary schools and 430 from junior high schools) responded. The teacher questionnaire had nine questions and was developed by the author and the Board of Education of City A prior to the start of this study. When we began this study, there was no clear research on a valid research instrument to measure teacher agency. Therefore, we drew on definitions of agency, and Priestley et al. (2015), to develop the following nine questions in parallel with items assessing the objectives of City A's integrated curriculum.

Do you agree with the following statements?

(Q1) I was more conscious of teaching in cooperation with elementary and junior high-school peers, compared to the previous year.
(Q2) I think that my colleagues have an understanding of the similarities and differences between elementary and junior high school education.
(Q3) When I teach a subject to my students, I am aware of the continuity between what they learn in elementary and junior high school.
(Q4) I think cooperative efforts among schools in the junior high school district are effective when instructing students.
(Q5) I think the various elementary and junior high school partnership activities implemented in my junior high school district are effective in reducing problems such as bullying and truancy.
(Q6) I think that "interacting" between elementary schools in the junior high school district are effective in reducing and eliminating the worry and unease felt by elementary students about junior high school life.
(Q7) I think that "interacting" between the elementary school and the junior high school as a "preparatory experience" for the 6th graders to prepare them for junior high school life is effective in reducing and eliminating children's anxiety and worries.
(Q8) I think that the collaboration between schools in the junior high school district is effective in terms of student guidance.
(Q9) I think that I am teaching with an awareness of the "student figure," which your junior high school district has set as a goal. (This question has been added since 2019.)

It was expected that teacher agency would be more likely to be demonstrated if teachers freely planned and managed "interacting" among students. This could easily lead to the alleviation of anxiety about entering junior high school, rather than class reforms such as the systematization of learning content and teaching methods in the elementary and junior high school sections.

Q6, Q7, and Q8 were incorporated to measure the demonstration of teacher agency, and to facilitate the identification of junior high school districts that have developed a more positive attitude toward integrated education from 2018 to 2021. The answers were rated on a 4-point Likert scale (4 = agree, 3 = somewhat agree, 2 = somewhat disagree, 1 = disagree).

The survey attempts to examine how the same students respond to the elementary and secondary education initiatives each year, and how their responses change over a three-year period. Because groups of students in a given year of enrollment may be special, we have a design in which the same groups from different years of enrollment are set up as Groups 1 and 2 for comparison. There were approximately 2,230 respondents in both Group 1 (5th grade in 2018, 6th grade in 2019, and 7th grade in 2020: same student group) and in Group 2 (5th grade in 2019, 6th grade in 2020, and 7th grade in 2021: same student group).

All students responded to the same 26 questions about their attitudes toward integrated elementary and junior high school curriculum, regardless of their level. For items Q1 through Q20, respondents were asked, "Do you agree with the following statements?" Their responses were framed on a 4-point scale (4 = Agree, 3 = Somewhat agree, 2 = Somewhat disagree, 1 = Disagree). For items Q21 through Q26, respondents were asked, "Have you reduced your

anxiety about the following statements?" Four-point scale (4: anxiety is reduced; 3: slightly reduced; 2: not much reduced; 1: not reduced at all).

The questions included were developed by the author and the Board of Education of City A prior to the start of this study. When we began this study, there was no clear research or a valid research instrument to measure student agency. Therefore, we used the definition of agency as a reference to develop them in parallel to the items assessing the objectives of the integrated curriculum in City A. The items were designed to be used to assess the effectiveness of the integrated curriculum.

Do you agree with the following statements?

① Increased sense of self-efficacy and feelings of self-esteem
Q1 I have good grade points
Q2 I want to be helpful to other people

② Improving awareness of norms and communication skills.
Q3 I comply with school and class rules
Q4 When talking with my friends, I listen to them till the end before responding

③ Fostering benevolent feelings and behaviors toward others
Q5 When I see someone in need of help, I willingly go ahead and help the person
Q6 I respect individual differences, such as ideas and personalities

④ Reducing anxiety in junior high-school students
Q7 I enjoy going to school

⑤ Establishing core foundational learning abilities (basic academic skills).
Q8 I have favorite subjects and learning activities at school
Q9 I understand the topics taught in Japanese classes
Q10 I understand the topics taught in arithmetic/mathematics classes
Q11 I understand the topics taught in English classes
Q12 I note down key points (aims, goals) and summaries (reflections) in class
Q13 I willingly engage with my studies

⑥ Cultivating the ability to think, judge, and express
Q14 When I have the opportunity to express my ideas, I can refer to data, texts, narrative structures, etc., that enable me to communicate my thoughts well

⑦ Fostering the ability to use knowledge and skills to solve problems
Q15 I apply topics learned in class to other areas of study and/or in daily life
Q16 I am willing to work on tasks presented by the teacher or activities planned by classmates or groups
Q17 I have dreams or goals for the future
Q18 I have opportunities to investigate and be involved with local issues and people in my classes, assignments, activities, etc.

⑧ Activities with elementary and junior high schools
Q19 I enjoy participating in activities together with my schoolmates
Q20 I want to be like a junior high-school student I have interacted with

⑨ Bewilderment around entering junior high school
Q21 I have concerns regarding being taught by a subject specific teacher
Q22 I have concerns about participating in extracurricular (club) activities
Q23 I have anxiety about talking to my new friends
Q24 I have anxiety about talking to older students
Q25 I am concerned that the content to be learned will be more difficult
Q26 I am anxious about taking midterms and final exams

Questions Q14, Q15, and Q18 were prepared as items that measured student agency.

Further, using reports on junior school district initiatives submitted to the local Board of Education each year, we attempted to identify the content and methods (including specific examples) employed for these initiatives, and to clarify the role played by administrators and curriculum leaders.

In compiling this paper, we decided to analyze the reports, by reading the four years of reports that have been submitted by the 15 cooperating junior high school districts anew, and by following the procedures below.

We conceptualized the teacher agency exerted in the districts by referring to models of agency formation identified by previous research (Leijen et al., 2020), while using the ecological approach identified in the literature review. Student

agency was represented by referring to the inner dimensions of agency identified by Vaughn (2020). In addition, we determined what was distinctive in these initiatives across schools, by referring to school practices that were research-informed, and the use of professional learning networks that have been identified in Brown et al.'s study (2017).

Results

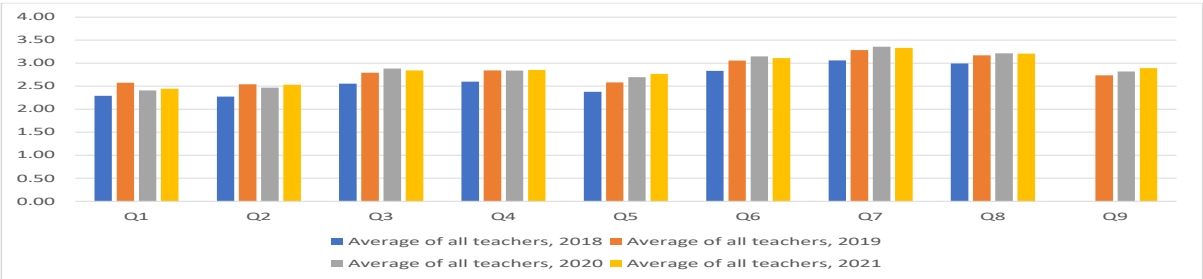
The following results were identified for Research Questions 1 and 2.

Results of the teacher questionnaire survey

Figure 1 shows how the analysis results (means) of City A teachers' responses for Q1–Q9 changed from 2018 to 2021.

The graph shows a steady upward trend. Even with the impact of COVID-19, Q6, Q7, and Q8, which relate to teacher agency, show changes that exceed the 3.0 standard for a positive response over the four-year period.

Figure 1
Overall mean (average) and standard deviation (SD) of all City A teachers' responses to Q1-Q9



	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
SD of all teachers, 2018	1.06	0.99	1.06	1.00	1.00	1.03	1.00	1.05	
SD of all teachers, 2019	0.86	0.80	0.73	0.72	0.73	0.69	0.60	0.69	0.74
SD of all teachers, 2020	0.88	0.81	0.74	0.75	0.74	0.68	0.63	0.68	0.74
SD of all teachers, 2021	0.88	0.82	0.77	0.74	0.73	0.70	0.66	0.68	0.72

Table 2 shows the average of teachers' responses to questions Q1-Q9 over the four-year period. The results show how they had perceived the integrated elementary and junior high school education initiatives, and indicate that teachers in the A, B, and L junior high-school districts held a more positive attitude than the others. This difference was also visible in responses to Q6, Q7, and Q8, which measured teacher agency.

In contrast, only Q6–Q8 and its four-year average showed a positive rating trend of almost 3. The results confirmed that teacher agency was more likely to be demonstrated in "interacting" activities, which were more likely to be freely devised outside the classroom than in classroom innovations. However, the schools with the highest number of teachers who give positive ratings to the elimination of elementary school students' anxiety about entering junior high school, and the development of the skills they want to nurture throughout the nine years in the classroom and in activities outside, were the from A, B, and L junior high-school districts. These were districts that had realized the curriculum reforms in City A.

Table 2
Average of teachers' responses over a four-year period for each of the 15 junior high school districts

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	total average	Q678 average
A School's 4-year average	2.92	2.97	2.94	3.13	2.80	3.25	3.37	3.20	3.25	3.09	3.27
B School's 4-year average	3.03	2.93	3.17	3.04	2.75	3.14	3.29	3.20	3.32	3.10	3.21
C School's 4-year average	2.31	2.29	2.68	2.77	2.61	3.08	3.32	3.19	2.68	2.77	3.19
D School's 4-year average	2.20	2.27	2.72	2.77	2.49	2.97	3.23	3.06	2.68	2.71	3.09
E School's 4-year average	2.36	2.34	2.84	2.76	2.57	3.04	3.25	3.12	2.74	2.78	3.14
F School's 4-year average	2.26	2.29	2.73	2.58	2.40	2.87	3.10	3.00	2.75	2.66	2.99
G School's 4-year average	2.55	2.53	2.73	2.82	2.60	3.09	3.24	3.14	2.85	2.84	3.16
H School's 4-year average	2.04	2.13	2.69	2.59	2.49	2.85	3.12	3.06	2.59	2.62	3.01
I School's 4-year average	2.38	2.30	2.76	2.67	2.59	3.09	3.35	3.13	2.88	2.79	3.19
J School's 4-year average	2.65	2.71	2.77	2.93	2.82	3.09	3.34	3.33	2.96	2.96	3.26
K School's 4-year average	2.73	2.85	2.93	2.97	2.70	3.09	3.32	3.19	2.89	2.96	3.20
L School's 4-year average	2.72	2.79	2.87	3.10	2.90	3.25	3.40	3.44	3.16	3.07	3.36
MSchool's 4-year average	2.19	2.27	2.65	2.59	2.46	2.94	3.17	3.07	2.63	2.66	3.06
N School's 4-year average	2.27	2.26	2.67	2.59	2.47	2.97	3.30	2.99	2.61	2.68	3.09
O School's 4-year average	2.32	2.34	2.63	2.69	2.56	2.90	3.11	3.09	2.64	2.70	3.03
total average	2.46	2.48	2.79	2.80	2.62	3.04	3.26	3.15	2.84	2.83	3.15

Table 3 shows the mean differences in teachers' attitudes toward integrated education initiatives in all participating districts (mean in 2021 minus mean in 2018). It compares the results of teachers' responses to Q1–Q9 in 2018, the first year of the initiative, with the results in 2021. The results indicate that teachers in the B, F, N, and O junior high school districts showed more pronounced changes from their starting points than their peers in the other districts. Table 3 also shows that from 2018 to 2021, teachers' most positive perceptions of the integrated education initiatives were related to Q5 (I think the various elementary and junior high school partnership activities implemented in my junior high school district are effective in reducing problems such as bullying and truancy)

From the table 3, it is clear that teachers in the A and L junior high school districts had a positive perception of the integrated education from the beginning, although their positive attitudes have not necessarily grown significantly over the four-year period. The teachers in the B junior high school district continued to have relatively highly positive attitudes for four years and also showed significant growth compared to the beginning. Conversely, in the F, N, and O junior high school districts, teachers were not necessarily positive about integrated education on average, when viewed over the four-year period. However, all 15 districts changed to a more positive attitude compared to the starting point.

Table 3
Changes in teachers' attitudes toward integrated education initiatives from 2018 to 2021

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	total amount
A school 2021-2018 Ave. point difference	0.02	0.28	0.34	0.46	0.52	0.29	0.48	0.27	0.10	2.77
B school 2021-2018 Ave. point difference	1.17	0.96	0.88	0.85	1.13	1.03	0.93	0.78	0.26	8.00
C school 2021-2018 Ave. point difference	-0.11	-0.24	0.05	-0.20	-0.02	0.15	0.21	-0.01	0.32	0.15
D school 2021-2018 Ave. point difference	-0.14	0.03	0.36	0.49	0.43	0.14	0.14	0.32	0.25	2.02
E school 2021-2018 Ave. point difference	0.15	0.21	0.44	0.18	0.34	0.29	0.32	0.32	0.36	2.61
F school 2021-2018 Ave. point difference	0.19	0.35	0.45	0.47	0.63	0.45	0.60	0.53	0.00	3.68
G school 2021-2018 Ave. point difference	0.11	0.15	0.29	0.38	0.50	0.39	0.32	0.07	0.12	2.34
H school 2021-2018 Ave. point difference	0.01	0.14	0.04	0.24	0.34	0.11	-0.03	0.21	0.15	1.21
I school 2021-2018 Ave. point difference	-0.11	0.15	0.13	0.11	0.34	0.15	0.25	0.09	0.18	1.30
J school 2021-2018 Ave. point difference	-0.15	0.08	0.21	-0.11	0.14	0.00	-0.23	-0.02	-0.15	-0.22
K school 2021-2018 Ave. point difference	-0.16	0.03	-0.06	0.03	0.17	0.14	0.23	0.09	0.01	0.47
L school 2021-2018 Ave. point difference	0.45	0.50	0.33	0.36	0.55	0.30	0.25	0.17	0.16	3.07
M school 2021-2018 Ave. point difference	0.28	0.32	0.24	0.10	0.39	0.20	0.15	0.15	0.11	1.94
N school 2021-2018 Ave. point difference	0.64	0.80	0.31	0.52	0.56	0.39	0.32	0.30	0.12	3.95
O school 2021-2018 Ave. point difference	0.46	0.56	0.48	0.42	0.36	0.51	0.49	0.32	0.26	3.86
total amount	2.82	4.33	4.49	4.29	6.37	4.54	4.44	3.6	2.26	

Results of the student questionnaire survey

Table 4 shows the change (mean) over the three-year time span for the responses to Q1–Q26 from all students in both groups. The results show that those in all junior high school districts responded positively to integrated education initiatives. The B and D districts had higher positive student evaluations compared to the others. As an overall trend, Q14, Q18, Q24, Q25, and Q26 were not rated positively by both groups of students, across all three years. Districts A, B, and I had the highest total average values for Q14, Q15, and Q18, the items measuring the demonstration of student agency.

Table 4
Students' attitudes and awareness of the integrated education initiatives from 2018 to 2021

	①		②		③		④	⑤						⑥	⑦		⑧		⑨		⑩					avarage	Average of
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26		2 groups
A school 2018-2020 Average	3.09	3.42	3.17	3.19	3.34	3.54	3.09	3.72	3.33	3.34	3.13	3.51	3.03	2.62	3.14	3.2	3.37	3.58	2.96	2.89	3.29	3.57	3.3	2.95	2.45	2.37	3.18	3.17
A school 2019-2021 Average	3	3.68	3.16	3.29	3.49	3.68	3.11	3.59	3.25	3.25	3.05	3.54	3.15	2.85	3.13	3.36	3.16	3.39	3.03	3.08	3.24	3.62	2.99	2.85	2.38	2.14	3.17	
B school 2018-2020 Average	3.33	3.76	3.13	3.44	3.5	3.7	3.51	3.81	3.27	3.59	3.42	3.7	3.02	2.77	3.3	3.44	3.46	3.28	3.45	3.33	3.48	3.71	3.69	3.27	2.12	2.06	3.33	3.38
B school 2019-2021 Average	3.38	3.83	3.51	3.52	3.61	3.78	3.51	3.78	3.56	3.58	3.48	3.84	3.4	3.22	3.46	3.55	3.4	3.12	3.28	3.33	3.58	3.59	3.57	3.17	2.66	2.5	3.43	
C school 2018-2020 Average	3.09	3.57	3.25	3.38	3.41	3.61	3.32	3.61	3.34	3.3	3.21	3.33	2.93	2.58	3.2	3.29	3.32	2.74	3.11	3.01	3.16	3.49	3.27	2.98	2.44	2.34	3.17	3.14
C school 2019-2021 Average	3.02	3.58	3.17	3.23	3.4	3.56	3.23	3.65	3.38	3.26	3.11	3.35	3.02	2.67	3.02	3.25	3.14	2.85	3.01	2.94	3.04	3.46	3.25	2.96	2.27	2.12	3.11	
D school 2018-2020 Average	3.31	3.76	3.39	3.46	3.57	3.74	3.5	3.81	3.61	3.54	3.55	3.53	3.25	2.94	3.46	3.47	3.45	3.21	3.29	3.26	3.37	3.63	3.41	3.12	2.61	2.42	3.37	3.28
D school 2019-2021 Average	3.23	3.67	3.33	3.28	3.45	3.64	3.35	3.67	3.35	3.36	3.33	3.31	3	2.61	3.18	3.36	3.35	2.75	2.82	2.9	3.28	3.51	3.4	2.98	2.34	2.24	3.18	
E school 2018-2020 Average	3.1	3.52	3.2	3.31	3.34	3.49	3.14	3.52	3.27	3.33	3.11	3.22	2.78	2.48	3.02	3.09	3.31	2.85	3.17	3.12	3.2	3.5	3.32	2.97	2.16	1.99	3.10	3.15
E school 2019-2021 Average	3.18	3.71	3.43	3.37	3.5	3.63	3.38	3.65	3.44	3.33	3.21	3.41	2.98	2.61	3.15	3.32	3.29	2.84	3.14	3.1	3.32	3.53	3.44	3.04	2.29	2.16	3.21	
F school 2018-2020 Average	3.14	3.57	3.3	3.26	3.31	3.52	3.27	3.7	3.25	3.21	3.01	3.38	2.9	2.57	3.1	3.2	3.31	2.88	3	2.95	3.35	3.59	3.33	3.01	2.24	2.06	3.13	3.12
F school 2019-2021 Average	3.06	3.61	3.1	3.26	3.45	3.55	3.13	3.59	3.2	3.22	3.12	3.31	2.77	2.62	3.02	3.22	3.3	2.8	2.99	2.99	3.25	3.45	3.28	2.89	2.23	2.16	3.10	
G school 2018-2020 Average	3.16	3.65	3.32	3.24	3.44	3.62	3.31	3.68	3.35	3.43	3.2	3.27	2.85	2.54	3.11	3.28	3.25	2.88	3.14	3.15	3.19	3.5	3.15	2.93	2.21	1.99	3.15	3.20
G school 2019-2021 Average	3.28	3.68	3.52	3.33	3.47	3.65	3.34	3.71	3.49	3.46	3.24	3.59	3.15	2.88	3.23	3.44	3.33	2.94	3.1	3.18	3.24	3.62	3.36	2.94	2.38	2.23	3.26	
H school 2018-2020 Average	2.99	3.57	3.19	3.22	3.41	3.52	3.19	3.53	3.34	3.4	3.1	3.07	2.92	2.53	3.13	3.08	3.2	2.79	3.04	2.95	3.16	3.51	3.49	2.96	2.35	2.08	3.10	3.04
H school 2019-2021 Average	3.11	3.44	3.1	3.06	3.24	3.32	3.22	3.56	3.12	3.33	2.85	3.05	2.88	2.34	2.94	3.14	3.23	2.43	2.79	2.73	2.98	3.31	3.29	2.76	2.2	2.04	2.98	
I school 2018-2020 Average	3.01	3.59	3.23	3.31	3.45	3.61	3.2	3.6	3.43	3.46	3.16	3.43	3.06	2.73	3.25	3.41	3.26	3.06	2.8	2.89	3.07	3.41	3.26	2.87	2.45	2.27	3.16	3.23
I school 2019-2021 Average	3.22	3.7	3.38	3.38	3.62	3.77	3.44	3.71	3.55	3.55	3.41	3.6	3.28	3	3.48	3.51	3.34	3.15	3.02	3	3.18	3.48	3.35	2.96	2.52	2.34	3.31	
J school 2018-2020 Average	3.08	3.64	3.27	3.24	3.49	3.61	3.24	3.71	3.38	3.33	3.35	3.61	2.97	2.73	3.15	3.34	3.4	3.05	3.16	3.11	3.42	3.57	3.58	3.03	2.64	2.43	3.25	3.22
J school 2019-2021 Average	3.16	3.63	3.39	3.32	3.44	3.65	3.22	3.71	3.32	3.49	3.42	3.6	3.01	2.74	3.16	3.35	3.23	2.73	3.04	3.1	3.11	3.35	3.3	2.86	2.32	2.18	3.19	
K school 2018-2020 Average	3.18	3.7	3.47	3.34	3.55	3.65	3.28	3.64	3.39	3.47	3.25	3.42	2.96	2.49	3.23	3.28	3.33	3	2.89	2.97	3.34	3.63	3.32	3	2.47	2.26	3.21	3.16
K school 2019-2021 Average	3.09	3.71	3.26	3.28	3.49	3.63	3.16	3.59	3.33	3.31	3.04	3.35	2.83	2.5	2.99	3.27	3.2	2.81	3.01	3.01	3.26	3.5	3.23	2.85	2.15	2.09	3.11	
L school 2018-2020 Average	2.93	3.42	2.98	3.14	3.2	3.46	3.13	3.54	3.12	3.06	2.93	3.38	2.84	2.57	2.97	3.1	3.17	2.77	2.78	2.79	3.17	3.44	3.07	2.69	2.37	2.17	3.01	3.10
L school 2019-2021 Average	3.12	3.59	3.19	3.34	3.5	3.66	3.26	3.77	3.23	3.5	3.12	3.57	3.16	2.93	3.19	3.31	3.4	3.13	2.98	3.07	3.13	3.43	3.09	2.77	2.21	2.15	3.18	
M school 2018-2020 Average	3.04	3.53	3.21	3.16	3.36	3.47	3.18	3.55	3.13	3.13	3.22	3.23	2.89	2.5	3	3.17	3.23	2.7	3.01	2.97	3.32	3.55	3.32	2.98	2.27	2.12	3.09	3.12
M school 2019-2021 Average	3.13	3.63	3.26	3.2	3.43	3.57	3.4	3.72	3.21	3.28	3.05	3.31	3.06	2.71	3.09	3.37	3.19	2.76	2.99	2.99	3.14	3.56	3.41	2.98	2.44	2.28	3.16	
N school 2018-2020 Average	3.04	3.65	3.21	3.17	3.48	3.43	3.13	3.58	3.26	3.39	3	3.42	2.87	2.53	3.2	3.2	3.27	2.85	2.78	2.89	3.2	3.51	3.29	2.93	2.44	2.24	3.11	3.18
N school 2019-2021 Average	3.18	3.69	3.33	3.29	3.45	3.65	3.4	3.76	3.4	3.5	3.26	3.41	3.2	2.76	3.22	3.32	3.44	3.06	3.07	3.15	3.18	3.56	3.3	2.92	2.46	2.26	3.24	
O school 2018-2020 Average	2.88	3.66	3.45	3.33	3.5	3.65	3.26	3.66	3.41	3.27	3.32	3.37	2.99	2.63	3.16	3.38	3.3	3.13	2.89	2.89	3.15	3.57	3.31	3.06	2.13	1.99	3.17	3.20
O school 2019-2021 Average	3.15	3.65	3.48	3.34	3.45	3.66	3.32	3.61	3.49	3.47	3.4	3.5	3.15	2.74	3.23	3.38	3.33	2.9	2.97	3.05	3.2	3.44	3.4	2.97	2.54	2.37	3.24	
Avarage	3.12	3.63	3.28	3.29	3.44	3.6	3.27	3.66	3.34	3.37	3.2	3.42	3.01	2.68	3.16	3.3	3.3	2.95	3.02	3.03	3.23	3.52	3.33	2.95	2.36	2.2	3.18	

Table 5 shows the changes in students' attitudes toward integrated education initiatives over the three-year period. The differences between the means of the beginning year and the final year reveal the questions whose responses express a positive attitude. In addition, the total difference in means is shown to identify those districts where the positive change in attitude is greater than in others. Students in districts B, D, and L tended to respond more positively to the initiatives involving integrated education compared to other districts. Interestingly, Q24, Q25, and Q26 did not receive positive responses (3.0) on average over the three-year period, but a significant increase in positive responses over the three-year period was readily apparent.

Table 5
Changes in students' attitudes toward integrated education initiatives from 2018 to 2021

	①		②		③		④	⑤						⑥	⑦		⑧		⑨		⑩						Total	Average of
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	amount	2 groups
A school 2020-2018 Ave. point difference	-0.2	-0.2	0.16	-0.1	-0.2	0	-0.1	-0.2	-0.1	-0.43	-0.5	-0.1	-0.3	0.1	-0.3	-0.1	-0.29	0.16	-0	0.44	0.01	-0.5	-0.1	0.03	-0.1	0.14	-2.76	-3.50
A school 2021-2019 Ave. point difference	-0.5	-0.1	0.19	0.06	-0.1	0.08	-0.1	-0.5	-0.1	-0.25	-0.21	-0.2	-0.4	-0.4	-0.1	-0.3	-0.78	-0.4	-0.2	0.14	0.24	-0.3	-0.5	-0.1	0.23	0.28	-4.24	
B school 2020-2018 Ave. point difference	0.06	0.17	0.47	-0.06	-0.1	0.33	0.15	-0.1	0	-0.08	0.03	-0.2	-0.2	-0.3	0.22	-0	-0.44	0.23	-0.1	0.11	0.39	-0.1	0.53	0.33	0.42	0.33	2.11	1.10
B school 2021-2019 Ave. point difference	-0	0.03	0.23	0.11	0.03	0.11	-0.2	-0.2	-0.2	-0.18	0.28	-0.3	-0.1	0.26	-0.1	0.01	0.01	-0.17	-0.2	0	0.15	-0.2	0.04	0.08	0.24	0.3	0.10	
C school 2020-2018 Ave. point difference	-0.2	-0	0.24	-0	-0	0.13	-0.1	-0.3	-0.1	-0.46	0.08	-0.2	-0.3	-0.1	-0.3	-0.2	-0.35	-0.5	-0	0.43	0.24	-0.1	-0.4	0.08	0.21	0.13	-2.24	-2.36
C school 2021-2019 Ave. point difference	-0.1	-0	0.14	0.07	-0.1	0.07	-0.2	-0.3	0.02	-0.55	0.17	-0	-0.3	-0	-0.3	-0.1	-0.49	-0.53	-0	0.09	0.19	-0.2	-0.4	0.15	0.08	0.12	-2.48	
D school 2020-2018 Ave. point difference	0.07	0.17	0.36	0.24	0.09	0.37	0.35	0.03	0.43	0.37	0.05	-0.2	0.03	0.4	0.16	0.21	-0.16	-0.52	0.1	0.39	0.5	0.01	-0.1	0.21	0.46	0.54	4.64	1.60
D school 2021-2019 Ave. point difference	-0	0.01	0.15	0.06	-0.3	0.06	-0.1	-0.4	-0.2	-0.22	-0.12	-0.1	-0.2	-0.2	-0.3	-0.2	-0.32	-0.34	0.17	0.02	0.37	0	-0.2	0.19	0.32	0.39	-1.44	
E school 2020-2018 Ave. point difference	-0.1	0.06	0.32	0.2	0	0.24	-0.1	-0.3	-0.1	-0.1	-0.23	-1	-0.2	-0	-0.1	-0	-0.31	-0.63	-0	0.17	0.35	-0.1	-0	0.3	0.28	0.39	-0.95	-1.02
E school 2021-2019 Ave. point difference	-0.1	0.04	0.09	-0.1	-0.1	0.09	0.03	-0.1	0.25	-0.38	0.07	-0.6	-0.2	0.06	-0.2	-0.1	-0.34	-0.64	0.09	0.03	0.31	0.11	-0.2	0.05	0.15	0.48	-1.10	
F school 2020-2018 Ave. point difference	-0.1	0.04	0.2	-0.01	-0.1	0.09	0.19	-0.3	-0.2	-0.3	0.17	0.04	-0	-0.1	0.04	-0.1	-0.44	-0.31	0.24	0.41	0.17	-0	-0.3	0.24	0.28	0.4	0.20	0.03
F school 2021-2019 Ave. point difference	-0.1	-0.1	0.21	0.05	-0.2	-0	0.07	-0.3	-0.3	0.07	0.2	0.1	0.08	0.15	-0.2	-0.1	-0.28	-0.46	0.08	0.17	0.39	-0	-0.4	-0	0.35	0.37	-0.15	
G school 2020-2018 Ave. point difference	-0.1	0.04	0.36	0.08	0.02	0.22	0.08	-0.3	-0.1	-0.09	0.2	-0.7	-0.3	-0.2	-0.2	-0.1	-0.4	-0.3	0.11	0.23	0.29	-0	-0.4	0.04	-0	0.23	-1.30	-0.84
G school 2021-2019 Ave. point difference	0	0.04	0.18	0.04	-0	0.18	-0.1	-0.3	0.11	-0.01	0.01	-0.2	-0.3	0.05	-0.1	0.06	-0.38	-0.36	0.09	0.1	0.26	0.05	-0.2	-0.1	0.18	0.21	-0.37	
H school 2020-2018 Ave. point difference	-0.5	-0.1	0.46	0.1	-0.2	-0	-0.1	-0.5	-0.2	-0.1	0.26	-1.4	-0.5	-0.6	-0.4	-0.3	-0.52	-0.85	-0.2	-0	0.23	0.03	0.28	0.29	0.32	0.12	-4.33	-0.44
H school 2021-2019 Ave. point difference	0.14	0.06	0.46	0.19	0.05	0.19	0.53	0.05	0.05	0.06	0.42	-0.4	0.12	0.18	0.07	0.11	-0.18	-0.16	0.11	0.22	0.41	-0.1	0.25	0.27	0.08	0.16	3.44	
I school 2020-2018 Ave. point difference	-0.4	-0.2	0.12	-0.02	-0.1	0.01	-0.3	-0.4	0.05	-0.06	0.17	-0.2	-0.1	-0.2	-0	-0.1	-0.52	-0.41	0.07	0.44	0.35	-0.2	-0.4	0.03	0.28	0.48	-1.53	0.52
I school 2021-2019 Ave. point difference	-0.1	0.03	0.38	0	-0.1	0.04	0.01	-0.1	0.22	0.13	0.46	0.09	-0.1	0.39	0.03	0.15	-0.31	-0.44	0.15	0.21	0.41	0.04	-0.2	0.27	0.55	0.36	2.57	
J school 2020-2018 Ave. point difference	0.21	-0.1	0.25	0.13	-0.1	0.12	-0.3	-0.3	0.09	-0.18	-0.1	-0.5	-0.2	0.15	-0.3	-0.2	-0.39	-0.18	-0.3	0.12	0.43	-0.1	0.23	0.33	0.47	0.51	-0.23	0.33
J school 2021-2019 Ave. point difference	-0.1	0.02	0.08	0.08	0.01	0.01	0.16	-0.1	0.05	-0.09	0.15	-0.4	-0.1	0.22	-0.1	-0.1	-0.49	-0.3	0.06	0.22	0.35	-0.1	0.42	0.18	0.39	0.41	0.88	
K school 2020-2018 Ave. point difference	-0.2	-0.1	0.22	-0.01	-0.1	-0.1	-0.1	-0.4	-0.3	-0.03	0.3	-0.2	-0.3	-0.2	-0.2	-0.1	-0.34	-0.44	-0.3	0.03	0.24	-0.1	-0.3	0.11	0.24	0.27	-2.24	-1.21
K school 2021-2019 Ave. point difference	-0	-0	0.3	-0.04	0.04	0.13	-0.2	-0.3	0.02	0.05	0.12	-0.1	-0.2	0.01	-0.2	-0.1	-0.17	-0.38	0.11	0.33	0.08	-0.1	-0.1	-0.1	0.33	0.36	-0.18	
L school 2020-2018 Ave. point difference	-0.1	-0.1	0.13	0.04	0.02	0.33	-0.2	-0.2	-0.2	-0.26	-0.69	-0	-0.1	0.08	-0.1	-0.2	-0.43	-0.28	-0	0.18	0.4	-0.1	-0.2	0.22	-0.1	0.04	-1.76	0.89
L school 2021-2019 Ave. point difference	0.07	-0.1	0.43	0.47	0.01	0.36	0.04	-0.1	-0.3	0.2	0.13	-0.2	0.29	0.36	-0.1	0.22	-0.23	-0.46	0.36	0.45	0.44	0.04	-0.1	0.01	0.54	0.55	3.54	
M school 2020-2018 Ave. point difference	-0.2	0.01	0.25	0.1	-0.1	0.15	0.08	-0.4	-0.1	-0.67	-0.13	-0.9	-0.3	-0.2	-0.3	0.1	-0.45	-0.72	-0.3	0.05	0.45	0.08	0.02	0.31	0.14	0.33	-2.66	-1.71
M school 2021-2019 Ave. point difference	-0.2	0.1	0.43	0.22	-0	0.14	-0.1	-0.3	-0.3	-0.28	-0.17	-0.3	-0.1	-0	-0.2	0.08	-0.45	-0.59	0.26	0.14	0.33	-0	-0.2	0.32	0.25	0.31	-0.76	
N school 2020-2018 Ave. point difference	-0	-0	0.2	0.37	-0	0.16	-0	-0.4	-0.3	0.01	0.46	-0.9	-0.5	-0.2	-0.1	0.01	-0.57	-0.67	0.25	0.24	0.51	0.14	0.01	0.24	0.46	0.39	-0.30	-0.59
N school 2021-2019 Ave. point difference	0.04	0.01	0.24	0.04	-0.2	0.1	0.03	-0.2	0.04	0	0.43	-0.8	-0.2	-0.2	-0.1	-0.1	-0.41	-0.36	0.21	0.23	0.15	-0.1	-0.1	-0.1	0.35	0.24	-0.87	
O school 2020-2018 Ave. point difference	-0.1	0.05	0.04	0.04	-0.2	-0	0.02	-0.3	-0.1	-0.59	-0.66	-0.4	-0.5	0.02	-0.4	-0.1	-0.35	-1.07	0.36	0.41	0.45	-0.1	-0.2	0.15	0.28	0.21	-3.04	-0.29
O school 2021-2019 Ave. point difference	0.11	0.08	0.26	0.07	0.01	0.06	0.12	-0.3	0.2	0.19	0.07	-0.3	-0.2	-0.1	-0.1	0.03	-0.27	-0.28	-0	0.23	0.71	0.23	0.13	0.39	0.4	0.57	2.47	
Total amount	-2.7	-0.2	7.56	2.4	-2.3	3.64	-0.3	-7.7	-1.5	-4.21	1.43	-11	-5.5	-0.7	-4.3	-1.5	-11.1	-12.4	1.29	6.23	9.82	-1.7	-3	4.45	8.16	9.62		

Results of the content analysis of annual reports submitted by junior high-school districts

The following results were identified for research question 3.

Based on the results of the questionnaire survey, A, B, and L were identified as the junior high-schools where teachers or students had positive attitudes toward integrated education, despite the challenges posed by the COVID-19 situation. Table 6 summarizes the reports submitted by these three districts, showing: 1) what they have primarily worked on and what initiatives have been implemented over the past four years; 2) what the principals and curriculum leaders have done to encourage teachers and students to do so; and 3) how ICT has been used to support the implementation of integrated education.
Table 6

Summary of initiatives implemented by districts A, B and L that were the most appreciated by teachers and students

	1)What efforts toward integrated education have been made over the past four years?	2)What have the principals and curriculum leaders done to encourage teachers and students to participate in integrated education?	3)How has ICT been used to support integrated education?
A	• Establishment of a core period of study in which students engage in inquiry-based learning activities throughout the nine-year period. • Information exchange by teachers about initiatives at each school at the end of each semester (three times a year) • Implementation of junior high-school district promotion meetings • Implementation of issue-specific practice exchange meetings. • Review of "acquiring power" aimed at elementary and junior high school • Collection of information that provided evidence of communication and consensus building, so that teachers can feel the meaning of the practice.	• Had teachers design and conduct workshops to learn how to carefully observe the attitudes students exhibit in various situations. • Provided regular opportunities for teachers to discuss the image and goals of the students they wish to nurture through integrated school education. • Encouraged opportunities and trainin g for teachers to discuss class conte nt and teaching methods, including t he effective use of ICT. • The curriculum leaders in charge of integrated schools gathered informa tion from other schools with the pr incipals' support. They built a netwo rk to connect with teachers from ot her schools.	• ICT is used to gather information about teachers' ideas about education, and to train them to use ICT in practice.
B	• Establishment of common core subjects for elementary and junior high schools • Creation of a mechanism to strengthen cooperation between elementary and junior high school teachers by creating groups where they can easily discuss student guidance and classroom content and methods • Creation of opportunities for elementary school students to participate in junior high school clubs during spring vacations • Collection of information that provides evidence of communication and consensus building, so that teachers and students can feel the meaning of the practice.	• Assisted student councils and teacher teams to collaborate in conducting cross grade level exchange events, not only in person, but also through online conferencing systems. • Supported the student council in publishing a junior high school district newsletter. • Curriculum leaders built a network t o connect with teachers from other schools and received support from outside for their school's initiatives.	• ICT is used to enable close and easy communication between student councils and teacher teams. It is used for classes and events, as needed for the purpose.
L	• Establishment of issue-specific subcommittees and steering committees • Setting up a plan called "Hot Challenge" for students to challenge things in a safe manner • Review of "acquiring power" aimed at elementary and junior high school • Setting up an opportunity for the student council and teachers to introduce study notes that they would like to imitate together. • Collection of information that provides evidence of communication and consensus	• Work with teachers to help students learn from each other's notebooks, plan projects to learn how to use their notebooks for learning, and plan projects to be featured on the World Wide Web. • Assist a team of teachers who are t rying to create an opportunity for s tudents from the same grade in diff erent schools in the same district to discuss in class using the WWW c onference system. • Curriculum leaders collected data on teachers' opinions to improve instr uction in response to student needs	• ICT is used to carry out projects organized by the student council with teachers' support. It is also used for classes and events, according to specific purposes and needs. • ICT is used for student-to-student interactions (classes and events) between schools.

	building, so that teachers and students can feel the meaning of the practice.		

Regarding what efforts have been made over the past four years, the following four points were extracted from the efforts of the three junior high school districts: (1) Establishment of core subjects that elementary and junior high school students work on together, in a systematic manner; (2) Regular discussions among all teachers in the junior high school districts about the image of students they want to develop through their efforts; (3) Establishment of issue-specific committees and other forums for regular discussions in elementary and junior high schools; and(4) Provide opportunities for students to participate in the planning and organization of events and other activities with their teachers.

Regarding what the principals and curriculum leaders have done to encourage them to do so, the following four points were extracted from the three junior high school districts' efforts: (1) Facilitating the planning of teacher-led training; (2) Facilitating student-led planning and administrative support; (3) Collecting teachers' and students' opinions on this initiative; and (4) Gathering information and networking with other junior high school districts and schools nationwide that are implementing integrated elementary and junior high school education initiatives.

Regarding how ICT has been used in this initiative, the following three points were extracted from the three junior school districts' initiatives: (1) ICT is used to collect information related to teachers' needs and initiatives; (2) ICT is used in classes, events, and exchange activities between schools; and (3) ICT is used for communication between teachers, student councils, and students in relation to this initiative.

Conclusion

Districts A, B, and L initially followed the curriculum formulated by the local Board of Education. However, as explained in the Results section, each of the 15 junior high school districts had developed its own unique approach. Thus, the schools' approach changed from "the hierarchist way" to "the egalitarian way," as principals paid attention to teacher/student agency and provided them with the opportunity and information to exert it (Hood, 1998; Malin et al., 2020). In addition, some curriculum leaders gathered information from other schools with the principal's support. They built a network to connect with teachers from other schools, through which they received additional external support. They valued evidence-based practices to gather information, communicate and build consensus, so that their constituents could sense the value of the practice (Brown, Schildkamp, & Hubers, 2017).

The findings of this study that promote teachers' agency are overlaid on the "model of the formation of agency," as depicted by Leijen, Pedaste, and Lepp (2020). In analyzing what teachers in the A, B, and L districts focused and worked on, we observed two trends in the demonstration of teacher agency. First, as was typical in the A district, efforts were centered on reflecting on and refining teachers' professional competencies, knowledge, beliefs, and values. Second, as was typical in the B and L junior districts, efforts were centered on implementing the long- and short-term perspectives of new projects that involved students, on reflecting on them and refining teachers' perceptions and interpretive skills.

The B and L districts were more student-oriented in their efforts toward integrated education during COVID-19. Their programs were designed by the student councils, and allowed students to think about and implement plans that would not make them feel isolated. Student councils took the initiative to create opportunities for children to reflect on and implement projects that would be of interest to them, help them feel connected to each other and contribute to society, even if just to a small extent. From responses to questionnaires, and the analysis of the yearly reports, we found that teachers were also aware of the importance of student agency. These two districts had implemented a disposition building project that encouraged students to articulate their purposes and intentions. This was the first of the "broad dimensions of agency" discussed by Vaughn (2021).

In sum, when teachers and students respond positively to initiatives, the principal, curriculum leaders, and learning environment need to focus their efforts on fostering and engaging teacher and student agency.

The purpose of this study was to identify the characteristics of the efforts in public compulsory education schools that challenged to solve problems by continuing to implement curriculum reforms in the municipalities even under the circumstances of COVID-19. Using the results of our cross-sectional survey and reports submitted annually by school districts to evaluate the implementation of the integrated elementary and junior high school curriculum in City A, we identified those junior high-school districts that maintained positive practices even during the COVID-19 pandemic and we discovered that they adopted an evidence-informed approach focused on agency. They were open

to receiving suggestions and cooperating with other schools to improve the integrated curriculum. They facilitated student activities to help generate ideas for better practice by using ICT, rather than simply recording the effects (Nelson & Campbell, 2017, Rickinson et al. 2017).

As this study was conducted in the midst of the COVID-19 pandemic, school districts were challenged to go beyond the restrictions imposed by the conventional practices of how schooling was conducted. At that time, ICT encouraged the needs and independent planning of students and teachers. In some cases, ICT is used to make conventional approaches more effective, and in others, it is implemented with the expectation that it can do things that were not possible previously. However, it was confirmed from the case studies that the people involved in the educational activities utilize ICT for their practical needs, and that there are opportunities for advanced usage and new development of ICT itself. When promoting the digital transformation of education, it will be crucial to pay attention to the examples of educational practices that go beyond conventional school practices.

References

Biesta, G., Priestley, M., & Robinson, S. (2015) The role of beliefs in teacher agency. *Teachers and Teaching, 21*(6), 624-640.

Brown, C., Schildkamp, K., & Hubers, M. D. (2017). Combining the best of two worlds: a conceptual proposal for evidence-informed school improvement. *Educational Research, 59*(2), 154-172.

Brushwood R. C., & Bimm, M. (2021). Children, schooling, and COVID-19: What education can learn from existing research. *Journal of Teaching and Learning, 15*(2), 3-20.

Burgin, X. D., Daniel, M. C., & Wasonga, T. A. (2022). Teachers' perspectives on teaching and learning during the pandemic in the United States. *Educational Process: International Journal*, *11*(3), 122-140.

Chung, J. (2023) Research-informed teacher education, teacher autonomy and teacher agency: the example of Finland. *London Review of Education, 21*(1), 13. DOI: https://doi.org/10.14324/LRE.21.1.13.

Deschênes, M., & Parent, S. (2022). Methodology to study teacher agency: A systematic review of the literature. *European Journal of Educational Research*, *11*(4), 2459-2476. https://doi.org/10.12973/eu-jer.11.4.2459

Farhadi, B., & Winton, S. (2022). Ontario teachers' policy leadership during the COVID-19 pandemic. *Canadian Journal of Educational Administration and Policy*, *200*, 49-62.

Hethrington, C. (2015). Meta-design as a pedagogical framework for encouraging student agency and democratizing the classroom. *The Canadian Journal for the Scholarship of Teaching and Learning*, *6*(2). DOI: http://dx.doi.org/10.5206/cjsotl-rcacea.2015.2.12

Hood, C. (1998) *The art of the state, culture rhetoric and public management*. Clarendon Press, Oxford. p.9.

Imants, J., & Van der Wal, M. M. (2020) A model of teacher agency in professional development and school reform. *Journal of Curriculum Studies, 52*(1), 1-14.

Kwatubana, S., & Molaodi, V. (2021). Leadership styles that would enable school leaders to support the wellbeing of teachers during COVID-19. *New Challenges to Education: Lessons from Around the World. BCES Conference Books*, 19, 106-112.

Leijen, Ä., Pedaste, M., & Lepp, L. (2020) Teacher agency following the ecological model: How it is achieved and how it could be strengthened by different types of reflection. *British Journal of Educational Studies, 68*(3), 295-310.

Malin, J. R., Brown, C., Ion, G., van Ackeren, I., Bremm, N., Luzmore, R., Flood, J., & Rind, M. G. (2020). World-wide barriers and enablers to achieving evidence-informed practice in education: what can be learnt from Spain, England, the United States, and Germany? *Humanities and Social Sciences Communications, 7*, 99. https://doi.org/10.1057/s41599-020-00587-8

Naff, D., Williams, S., Furman-Darby, J., & Yeung, M. (2022). The mental health impacts of COVID-19 on PK–12 students: A systematic review of emerging literature. *AERA Open*, *8*(1), 1–40. https://doi.org/10.1177/23328584221084722

Nelson, J., & Campbell, C. (2017). Evidence-informed practice in education: meanings and applications. *Educational Research, 59*(2), 127-135.

Nikolaidis, A. C. (2018). Interpretation and student agency. *Philosophical Studies in Education, 49*, 34-46.

OECD (2019). OECD Future of education and skills 2030 project background. Retrieved September 18, 2023, from https://www.oecd.org/education/2030-project/about/E2030%20Introduction_FINAL_rev.pdf

OECD (2020). Curriculum (re)design A series of thematic reports from the OECD education 2030 project. Overview Brochure. Retrieved September 18, 2023, from https://www.oecd.org/education/2030-project/contact/brochure-thematic-reports-on-curriculum-redesign.pdf

Oolbekkink-Marchand H. W., Hadar, L. L., Smith, K., Helleve I., & Ulvik, M. (2017). Teachers' perceived professional space and their agency. *Teaching and Teacher Education 62*, 37-46

Priestley, M., Biesta, G. J. J., & Robinson, S. (2015). Teacher agency: An ecological approach. London: Bloomsbury Academic.

Rickinson, M., de Bruin, K., Walsh, L., & Hall, M. (2017). What can evidence-use in practice learn from evidence-use in policy? *Educational Research, 59*(2), 173-189.

Stanford Encyclopedia of Philosophy. (2019). Agency. Retrieved September 18, 2023, from https://plato.stanford.edu/entries/agency/

Stenalt, M. H. (2021). Digital student agency: Approaching agency in digital contexts from a critical perspective. *Frontline Learning Research*, 9(3), 52-68.

Varpanen, J., Laherto, A., Hilppö, J., & Ukkonen-Mikkola, T. (2022). Teacher agency and futures thinking. *Education Sciences*, *12*, 177. https://doi.org/10.3390/educsci12030177

Vaughn, M. (2020). What is student agency and why is it needed now more than ever? *Theory Into Practice, 59*(2), 109-118, DOI: 10.1080/00405841.2019.1702393

Vaughn, M. (2021). *Student agency in the classroom: Honoring student voice in the curriculum*. New York and London: Teacher College Press. pp. 17-19.

White, S., Harmon, H., Johnson, J., & O'Neill, B. (2022). In-the-moment experiences of rural school principals in the COVID-19 pandemic. *The Rural Educator*, *43*(2), 47-59.

Wilson, S., Tan, S., Knox, M., Ong, A., Crawford, J., & Rudolph, J. (2020). Enabling cross-cultural student voice during COVID-19: A collective autoethnography. *Journal of University Teaching & Learning Practice, 17*(5). Retrieved September 18, 2023, from https://ro.uow.edu.au/jutlp/vol17/iss5/3

Wilson, A. (2021). Emotionally Agile Leadership Amid COVID-19. *School Leadership Review, 15*(2). https://scholarworks.sfasu.edu/slr/vol15/iss2/1

Yanoski, D. C., Gagnon, D., Schoephoerster, M., McCullough, D., Haines, M., & Cherasaro, T. L. (2021). Variations in district strategies for remote learning during the COVID-19 pandemic (REL 2021–118). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Central. Retrieved September 18, 2023, from: http://ies.ed.gov/ncee/edlabs.

Yıldız Ş., S., & Göçen, A. (2022). Teachers' views on leadership in the new normal. *Asian Journal of Distance Education*, *17*(1), 1-16. https://doi.org/10.5281/zenodo.5979709

York-Barr, J. & Duke, K. (2004). What do we know about teacher leadership? Findings from two decades of scholarship. *Review of Educational Research, 74*(3), 255-316.

Zeiser, K., Scholz, C., & Cirks, V. (2018). *Maximizing student agency. Implementing and measuring student-centered learning practices*. American Institutes for Research (AIR). Retrieved September 18, 2023, from https://files.eric.ed.gov/fulltext/ED592084.pdf