Visual Arts in Early Childhood Education

▶ Bresler (1998) recognised the relationship between child arts and fine arts, considering both as essential elements of a meaningful arts curriculum.

▶ Early art refers to original expression in children's dance, drama, visual arts and music, and this has been a legitimate subject of scholarly discussion in early childhood education (ECE) for several decades (Twigg & Garvis, 2010).

▶ The power of arts and their impact on children's aesthetic and creative development have long been recognised (Clement, 1992).

▶ The visual arts become the first language of young children, providing ways for them to learn and express themselves (Wright, 2003).

▶ Art is an important tool through which children can demonstrate their abilities, whether intellectual, emotional or aesthetic (Freeman, 1980; Wright, 2014).

Teaching Approaches in Early Visual Arts

- According to Bresler (1993, pp. 30e31), three distinct orientations can be identified, based on the prevailing educational beliefs and goals: (a) a production orientation, (b) a little-intervention orientation, and (c) a guided-exploration orientation.

- Kindler (1995) found that teachers' non-directive guidance motivated children to sustain their interest in visual art activities when teachers were eager to be attentive and have dialogues related to their artistic processes.

- Bae (2004) suggested that teachers should guide children to observe, listen and express their feelings through artistic expression and aesthetic appreciation.

- Eckhoff (2008) studied kindergarten teaching in visual arts, finding that if teachers do not integrate rich and meaningful art viewing experiences, it is difficult for them to discuss or appreciate art with young children.

- Eckhoff (2012) emphasised the power of conversation as an integral pedagogical component in teaching visual arts to young children.

Teacher Education in Early Visual Arts

▶ Winton and Bussye (2005) observed 900 children across six US states, discovering that teachers engaged children in arts-related activities for only 9% of the time.

▶ Oztürk and Erden (2011) examined Turkish kindergarten teachers' beliefs and found that teachers had difficulty integrating visual arts with other activities in the curriculum.

▶ Garvis and Pendergast (2010) found that student teachers perceived the level of support from sources within the teacher education institution as minimal compared with the support available for literacy and numeracy.

▶ Bautista et al. (2018) observed 113 kindergarten classrooms in Singapore, demonstrating that certain art forms were rarely evident in kindergarten classrooms (e.g. 3D visual arts, dance and instrumental performance); instead, the arts-related pedagogical practices in ECE settings were traditional and product-oriented in nature.

The Hong Kong Context

▶ In March 2017, the committee reviewed the Guide to the Pre-primary Curriculum, and renamed it the Kindergarten Education Curriculum Guide ('the Guide'). In the Guide, the learning domain 'Arts' was renamed 'Arts and Creativity' to place greater emphasis on children's freedom of expression and creativity. In this revision, the core framework for developing well-rounded children remains unchanged, and aesthetics continues to be a component of the curriculum goals.

▶ Children's capacity for art appreciation, creative expression and imagination are highlighted in the document, and elements of the visual arts are also mentioned (e.g., lines, colours, shapes and forms of expression). In general, the new Guide has strengthened teachers' basic understanding of early visual arts teaching (Curriculum Development Council, 2017).

Figure 4: Kindergarten Education Curriculum Framework
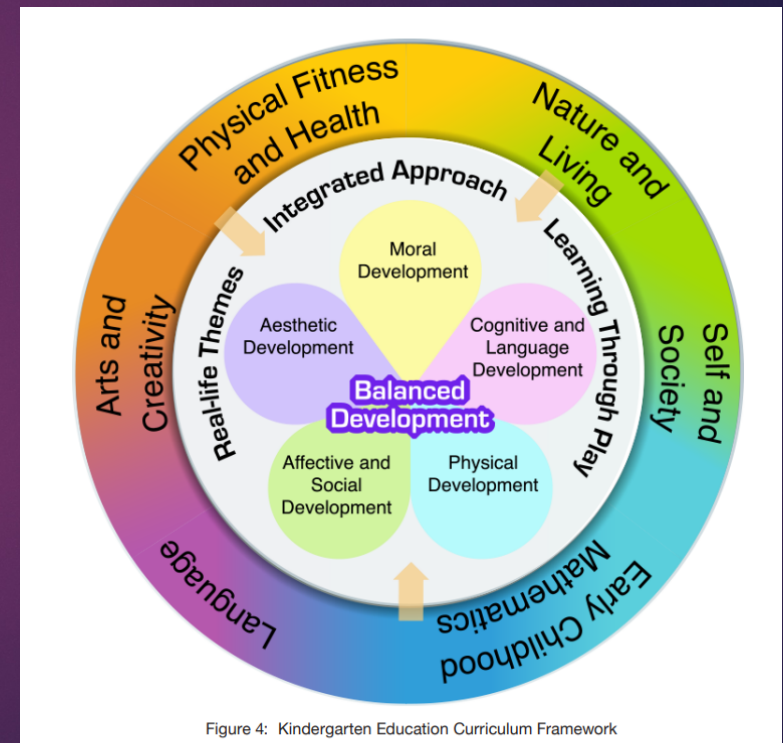
The Hong Kong Context

▶ The entire Hong Kong educational system is competitive, academic and rigid, all of which run opposite to children-centredness (Lee & Yelland, 2017).

▶ Teachers are given little space in kindergartens and can only provide limited visual arts experiences to children (Bautista et al., 2018; Leung, 2018).

▶ Most Hong Kong kindergarten teachers have not received any visual arts training since Secondary Three, unless they specifically chose an arts-related subject (e.g. visual arts) as one of their elective subjects for the Hong Kong Diploma of Secondary Education Examination.

▶ Even most bachelor's degree programmes in ECE do not provide student teachers with a single module on visual arts (Leung, 2018).

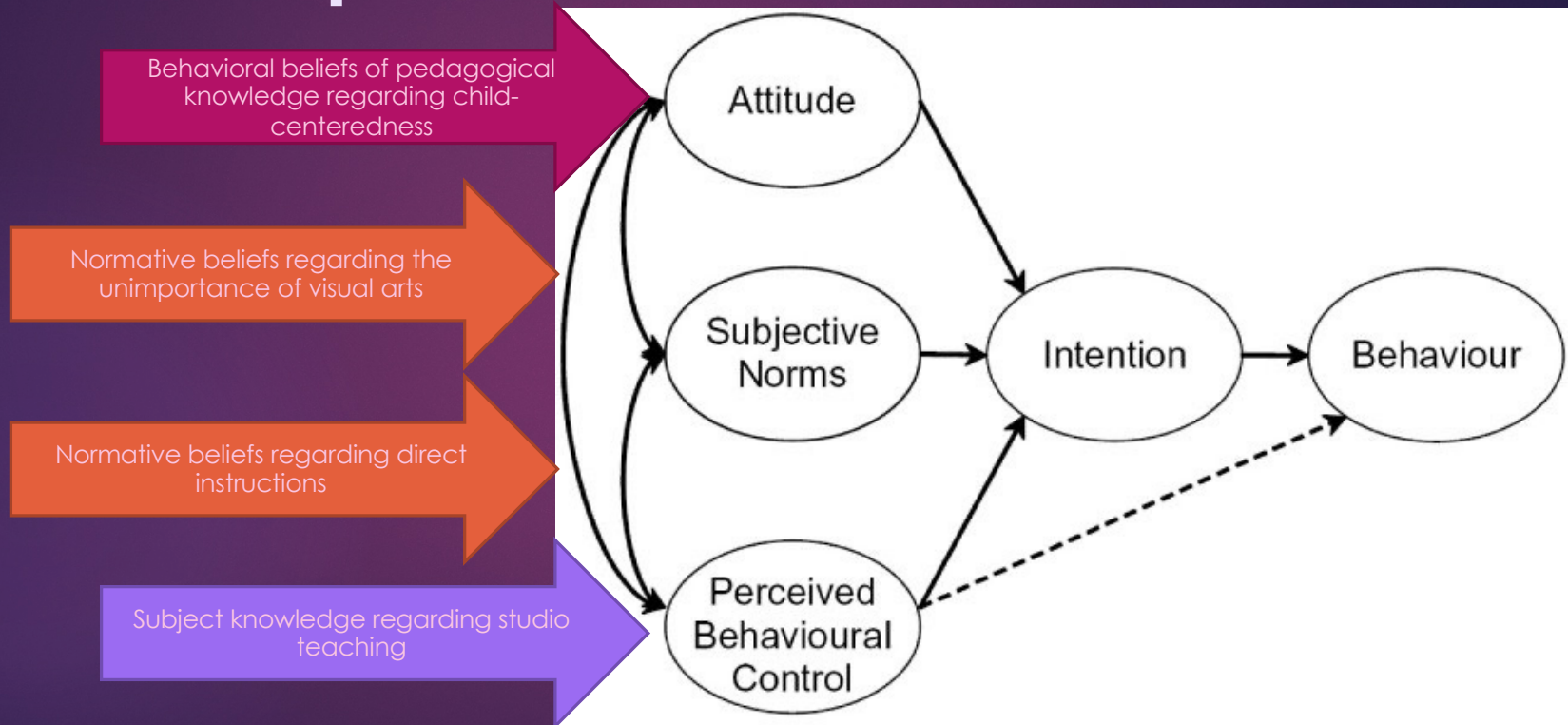# Explaining kindergarten teachers' beliefs and practices

The qualitative part (Phase 1) is an interview study of 19 kindergarten teachers in two focus groups, aiming to develop a conceptual structure of teachers' behavioural, normative and control beliefs. The quantitative part (Phase 2) is a survey study of 243 teachers from the randomly sampled 21 kindergartens regarding their EVAE beliefs and practices. Most teachers believe in child-centred teaching while practising teacher-directed instruction and support creativity while delivering closed-ended instruction. Four influential factors are identified to account for this gap: (1) practising child-centred pedagogies as a result of behavioural beliefs; (2) undervaluing visual arts as a result of normative beliefs; (3) instructing children directly as a result of normative beliefs; and (4) delivering subject knowledge in studio teaching as a result of control beliefs.

Table 1. Thematic analysis of the focus group interviews

Codes	Sub-themes	Themes
No visual arts lesson at the University study (9.44%)	Visual arts are unimportant based on teachers' training experiences in the universities.	Theme 1: *Considering visual arts as an unimportant area* Total responses: 15.74%
Delivered solely theories of children's development and creativity at the University study (6.30%) Imitating techniques through demonstration in social media (2.36%)	Teachers believe that their pedagogies are based on their self-learning of visual arts.	Theme 2: *Learning artistic skills and techniques by themselves* Total responses: 23.62%
Walking through shopping malls to have insights (1.57%) Reading webpage/ books to equip knowledge (3.14%) Delivering visual arts by relying on the materials (1.57%)	Teachers believe that they feel satisfied by providing child-centered opportunities to children.	
Providing child-centered opportunities to children (14.96%) Emphasize on craft training (11.02%)	Teachers should teach visual arts by stepwise instructions based on the teaching guidelines from the school organization.	Theme 3: *Instructing children to learn visual arts* Total responses: 38.57%
Emphasize on technique training (14.17%) Teaching effectiveness is based on whether children understand the steps and follow-through (7.08%) Teaching guidelines from the school organization (6.30%)		
Know little about visual arts in terms of art history, professional techniques (14.17%)	Teachers found that they lack content knowledge to introduce new forms of art and foster creativity in the kindergarten curriculum.	Theme 4: *Refusing to develop new artistic forms in EVAE* Total responses: 22.05%
Know little about digital technology (3.15%) Content knowledge could be equipped by attending short courses (3.15%) Content knowledge could be equipped by visiting exhibitions (1.57%)		

Leung, S. K. Y., Wu, J. & Li, H. (2023). Explaining kindergarten teachers' beliefs and practices regarding early visual arts education: A perspective from the theory of planned behavior. *Journal for the Study of Education and Development,* 46(1), 190–224. https://doi.org/10.1080/02103702.2022.2133400

Explaining kindergarten teachers' beliefs and practices

Behavioral beliefs of pedagogical knowledge regarding child-centeredness

Normative beliefs regarding the unimportance of visual arts

Normative beliefs regarding direct instructions

Subject knowledge regarding studio teaching

Attitude

Subjective Norms

Perceived Behavioural Control

Intention

Behaviour

(Ajzen, 1991)

Investigating teaching behaviours in early visual arts

The study aimed at using a mixture of direct observations and interviews to investigate kindergarten teachers' knowledge and pedagogical approaches to visual arts. An adapted version of the Early Childhood Teacher Behaviour Observation (ECTBO) instrument was used to investigate the possible reasons for teachers' current behaviours in Hong Kong visual arts classrooms. In an observation study, a total of 18 classrooms with 76 children in two local kindergartens in Hong Kong were observed during a 30-min visual arts activity. Altogether, 540 min of video data were recorded and analysed using field notes and a time sampling strategy. In addition, 18 class teachers from the observed classrooms were invited to give post-observation interviews, and 810 min of data were recorded.

Table 1
Adapted ECTBO for early visual arts (EVA) classroom observations.

Leung, S. K. Y., Wu, J., Lam, Y. & Ho, T. H. (2023). An explanatory study of kindergarten teachers' teaching behaviours in their visual arts classrooms. *Teaching and Teacher Education*. https://doi.org/10.1016/j.tate.2023.104018

Investigating teaching behaviours in early visual arts

The interview participants supported the importance of non-directive early childhood arts. However, the observation findings revealed that they still relied heavily on directive teaching in implementing early visual arts teaching. Thus, a discrepancy was found between the teachers' subject matter knowledge in visual arts and the integration of their pedagogies in their actual classroom practice.

Table 2
Distribution of observed behaviours according to class level.

		K1 (n = 105) N(%)	K2 (n = 97) N(%)	K3 (n = 93) N(%)	All (n = 295) N(%)
Directive behaviours		61(58.10%)	52(53.61%)	32(34.41%)	145(49.15%)
DB1	Give directions	13(12.38%)	20(20.62%)	10(10.75%)	43(14.58%)
DB2	Ask closed question	2(1.90%)	7(7.22%)	2(2.15%)	11(3.73%)
DB3	Demonstrate	13(12.38%)	9(9.28%)	11(11.83%)	33(11.19%)
DB4	Give information	1(0.95%)	5(5.15%)	2(2.15%)	8(2.71%)
DB5	Praise/reward	1(0.95%)	3(3.09%)	2(2.15%)	6(2.03%)
DB6	Punish	1(0.95%)	1(1.03%)	0(0.00%)	2(0.68%)
DB7	Threaten	1(0.95%)	1(1.03%)	0(0.00%)	2(0.68%)
DB8	Do for	29(27.62%)	6(6.19%)	5(5.38%)	40(13.56%)
Non-directive behaviours		23(21.9%)	26(26.8%)	49(52.69%)	98(33.22%)
ND1	Observe children	10(9.52%)	10(10.31%)	38(40.86%)	58(19.66%)
ND2	Ask open question	0(0.00%)	2(2.06%)	2(2.15%)	4(1.36%)
ND3	Scaffold	7(6.67%)	8(8.25%)	4(4.30%)	19(6.44%)
ND4	Play with children	0(0.00%)	0(0.00%)	0(0.00%)	0(0.00%)
ND5	Offer choice	6(5.71%)	4(4.12%)	1(1.08%)	11(3.73%)
ND6	Encourage	0(0.00%)	2(2.06%)	4(4.30%)	6(2.03%)
Other behaviours		21(20%)	19(19.59%)	12(12.90%)	52(17.63%)
OB1	Positive response	3(2.86%)	7(7.22%)	6(6.45%)	16(5.42%)
OB2	Negative response	1(0.95%)	2(2.06%)	1(1.08%)	4(1.36%)
OB3	Classroom management	17(16.19%)	10(10.31%)	5(5.38%)	32(10.85%)
		105(100%)	97(100%)	93(100%)	295(100%)

Examining teachers' CK and PCK in early visual arts

The study aimed to investigate kindergarten teachers' content knowledge and pedagogical content knowledge in early visual arts education (EVAE) and to identify the challenges they faced in teaching visual arts to children. The study surveyed 342 in-service kindergarten teachers in Hong Kong and conducted individual interviews with 12 participants. The findings revealed that Hong Kong kindergarten teachers generally performed well in terms of their pedagogical content knowledge, but they lacked content knowledge in various forms of early visual arts (EVA) and faced challenges in teaching visual arts effectively.

Early Childhood Visual Arts Education: Teachers' Content Knowledge, Pedagogical Content…

Table 2 Structural Design of the Survey

Dimensions	Specifications	Tables shown in the finidings section
Demographic data of teachers	Age, gender, qualifications, year(s) of teaching experience, type of kindergarten, class level taught this year, mode of work, position of work, previous training in visual arts	
Beliefs about EVAE	• Beliefs about delivering visual arts activities to children • Importance of various aspects for delivering visual arts activities to children	Table 3 Teachers' Beliefs and Perceived Importance of Delivering EVA Activities
Pedagogical knowledge in EVA classrooms	Frequency of performing behaviors in visual arts classrooms based on the ECTBO instrument (Wen et al., 2011)	Table 4 Kindergarten Teachers' Self-Reported Directive vs. Non-Directive Teaching Behaviors in EVA Lessons
Content knowledge of EVA	• Understanding of elements of visual arts • Understanding of historical periods of visual arts • Frequency of delivering forms of visual arts activity	Table 5 Teacher's Self-Assessed Content Knowledge of Visual Arts Table 6 Self-Reported Frequency of EVA Activities per Month
Teachers' perceived challenges in EVA	Challenges of delivering visual arts in kindergarten classrooms	Table 7 Teachers' Perceived Challenges in EVAE

Leung, S. K. Y., Wu, J., & Ho, T. H. (2024). Early childhood visual arts education: Teachers' content knowledge, pedagogical content knowledge, and challenges. *The Asia-Pacific Education Researcher*. https://doi.org/10.1007/s40299-024-00859-w

Examining teachers' CK and PCK in early visual arts

Table 5 Teachers' Self-Assessed Content Knowledge in Visual Arts (N = 342)

	Very unfamiliar (1)	Unfamiliar (2)	Familiar (3)	Very familiar (4)	M (SD)
To what extent are you familiar with the following basic elements in visual arts?					
Color	0.29%	4.40%	80.06%	15.25%	3.10 (0.45)
Shape	0.29%	5.56%	81.29%	12.87%	3.07 (0.44)
Line	0.29%	7.60%	78.36%	13.74%	3.06 (0.47)
Pattern	0.29%	9.65%	79.53%	10.53%	3.00 (0.48)
Space	0.59%	21.11%	70.38%	7.92%	2.86 (0.54)
Texture	0.58%	22.81%	70.47%	6.14%	2.82 (0.53)
Brightness	0.58%	28.07%	63.16%	8.19%	2.79 (0.59)
Composition	1.46%	30.99%	61.11%	6.43%	2.73 (0.60)
Form	1.17%	37.13%	57.60%	4.09%	2.65 (0.58)
To what extent are you familiar with the following schools of thought in art history?					
Pop art	15.45%	49.85%	30.61%	4.08%	2.23 (0.76)
Abstract expressionism	15.16%	50.73%	31.49%	2.62%	2.22 (0.73)
Realism	15.16%	52.19%	30.61%	2.04%	2.20 (0.71)
Renaissance	17.01%	50.73%	31.09%	1.17%	2.16 (0.71)
Impressionism	18.13%	54.68%	24.27%	2.92%	2.12 (0.73)
Surrealism	18.18%	57.77%	21.11%	2.93%	2.09 (0.71)
Romanticism	19.01%	56.73%	22.51%	1.75%	2.07 (0.69)
Conceptual art	19.24%	62.97%	16.03%	1.75%	2.00 (0.65)
Baroque	21.35%	58.77%	19.01%	0.88%	1.99 (0.66)
Expressionism	21.64%	62.28%	14.91%	1.17%	1.96 (0.64)
Post-impressionism	20.47%	66.08%	11.99%	1.46%	1.94 (0.62)

The table displays the mean and SD values in descending order

Table 7 Teachers' Perceived Challenges in EVAE (N = 342)

	Very unlikely (1)	Unlikely (2)	Likely (3)	Very likely (4)	M (SD)
Receiving inadequate training in visual arts	0.00%	5.54%	57.73%	36.73%	3.31 (0.57)
Having a very tight teaching schedule in kindergarten	1.46%	17.25%	46.78%	34.50%	3.14 (0.75)
Lack of attention from school managers to visual arts teaching	21.87%	44.90%	30.61%	2.62%	3.14 (0.78)
Acquiring limited knowledge of visual arts	0.87%	14.29%	59.48%	25.36%	3.09 (0.65)
Relying too much on a step-by-step teaching approach	0.29%	17.78%	58.89%	23.03%	3.05 (0.65)
Being equipped with limited skills and tools in visual arts	0.58%	17.78%	61.22%	20.41%	3.01 (0.64)
Overemphasizing handcrafts in teacher education	0.87%	24.49%	54.23%	20.41%	2.94 (0.69)
Lack of attention from parents to children's learning in visual arts	2.92%	22.74%	58.60%	15.74%	2.87 (0.70)

The table displays the mean and SD values in descending order

In implementing EVA activities, the teachers also stressed the importance of child-centeredness for children's art-making processes:
My stance is to not directly give instructions to children. . . We cannot force them to follow our steps. We can provide some references for them and guide them to explore. We encourage them to observe the environment and make use of their daily experiences to create their artworks. Unlike adults, children have high levels of creativity and do not have a frame to limit themselves. (Teacher C)

Exploring teachers' TPACK through Digital Storytelling

Altogether, 42 online storytelling activities were recorded, and preservice teachers' views were collected in a 120-minute focus group. Our findings indicated that preservice teachers spend most of their time on pedagogical content knowledge (PCK) and technological content knowledge (TCK) and only a few minutes on technological pedagogical knowledge (TPK) during digital storytelling activities. It revealed the extent of the TPACK of current ECE teachers and provided insights and recommendations on how to improve ECE teachers' professional development regarding technology, including providing multiple types of digital devices and their applications and examples of technology-assisted teaching.
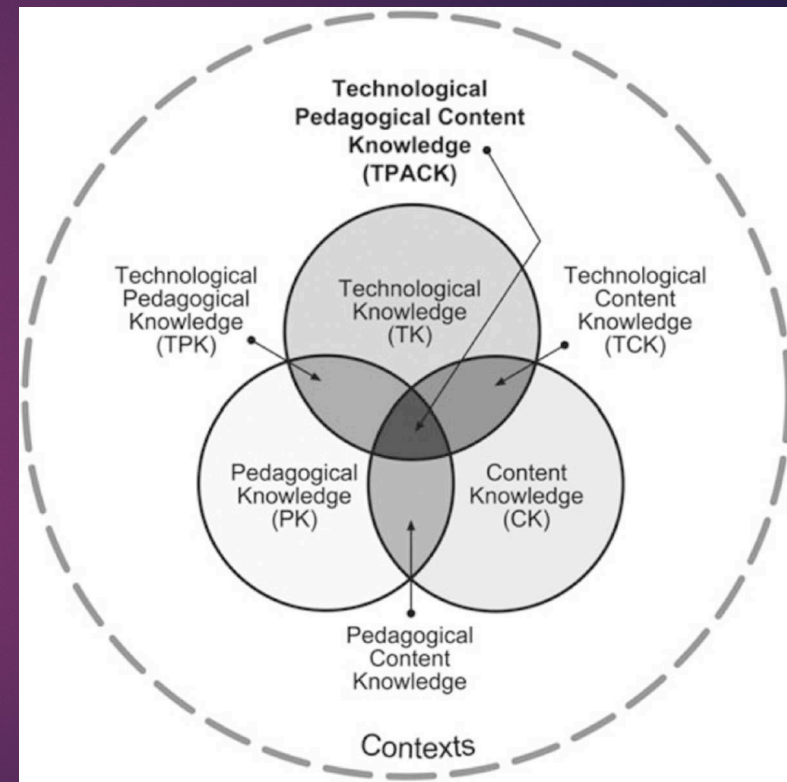
Leung, S. K. Y., Yip, O. W. & Li, J. W. (2024). Exploring preservice ECE teachers' TPACK through digital storytelling during the pandemic. *Early Child Development and Care*. https://doi.org/10.1080/03004430.2024.2395381

# Exploring teachers' TPACK through Digital Storytelling

A participant shared how she used the functions of Zoom for telling stories to children:

Before telling stories, I introduced the story by using screen sharing to let children look at the cover of the storybook. Children could observe and guess the story's content, which may stimulate their observation and creativity. Then, I used the function of screen sharing in Zoom to attract children to read the storybook. When changing the scene of the story, such as the living room of the bear family or their bedroom, I also used Zoom's screen-sharing function to change the background image so that the children were more involved in the story. (Teacher F)

Table 4. TPACK indicators relating to teachers' digital storytelling for children.

Specific behaviours	General behaviours	TPACK knowledge
Motivating children by using props (e.g. puppets and real objects)	Motivating children's learning	Pedagogical content knowledge (PCK)
Manipulating physical objects to make concepts visible	Making concepts visible	
Reinforcing children positively Altering voice to draw children's attention Inviting children to participate in class	Engaging and involving children	
Probing questions Rephrasing children's responses	Facilitating children's inquiry	
Summarizing concepts Making conclusions	Consolidating knowledge	
Using text to present teaching content	Making concepts visible digitally	Technological content knowledge (TCK)
Using graphics or photos to illustrate concepts or narratives Inserting videos to illustrate concepts or narratives Creating voice-overs to demonstrate concepts or narratives Inserting animations to illustrate concepts or narratives Applying virtual backgrounds to describe context or narratives Using screen sharing to share PowerPoint or Word documents for storytelling	Illustrating concepts or narratives electronically	
Inserting PowerPoint with graphics to consolidate storylines or key ideas Using PowerPoint with graphics to revisit concepts or narratives	Consolidating ideas electronically	
Sharing files through the chat box to facilitate extended learning Interacting with the camera to motivate children Using the camera's screen on–off function to attract children	Using technical functions to motivate children's learning	Technological pedagogical knowledge (TPK)
Inserting new videos to facilitate discussion	Using technical functions to encourage class interactions	
Using digital graphics to assess children's learning outcomes	Using technical functions to assess children's learning and performance	

Facilitating children's computational thinking through animation arts
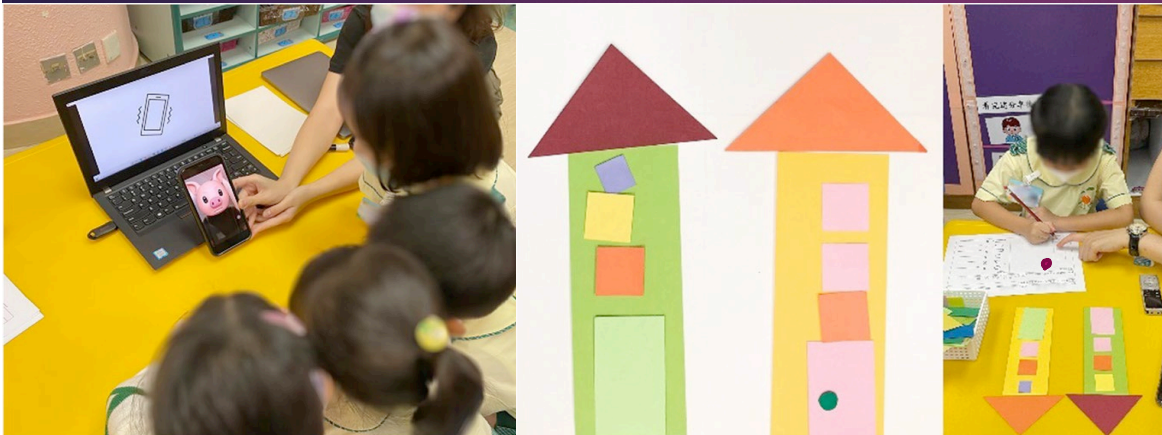
Teacher: Where do the three little pigs live? This or that one?
Child R: This one.
Teacher: Then who will live in this one?
Child R: The wolf.
Teacher: Oh, the wolf lives just next to the three little pigs? It sounds dangerous. What should they do to stop the wolf from coming nearby?
Teacher: [Pointing at the little green circle on the righthand side of the picture] Wow, you have a lock here!
Child R: The little pigs should not go into this building. It is dangerous for them.
Teacher: So, you lock up the wolf but not the little pigs, who can go in and out freely.
Child R: The three little pigs have the key for their house. The key for the wolf's house is taken away.
Teacher: The wolf does not have the key.
Child R: The three little pigs get his key, and they flush it down the toilet!
Teacher: So the wolf can never get out again.

Leung, S. K. Y., Wu, J., Li, J. W., Lam, Y. & Ng. O. (2024). Examining young children's computational thinking through animation art. *Early Childhood Education Journal*. https://doi.org/10.1007/s10643-024-01694-w

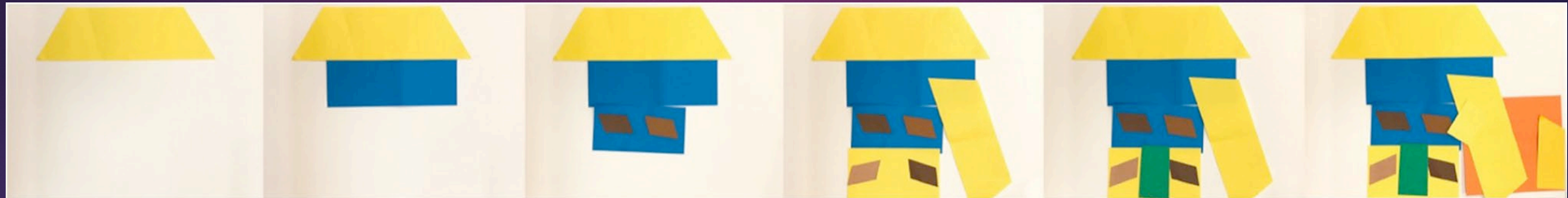# Facilitating children's computational thinking through animation arts

Table 3 Developmental Trajectories of Children's CT in connection to Animation Making

Powerful ideas (Bers, 2018)	Age		
	K1 (aged 3–4)	K2 (aged 4–5)	K3 (aged 5–6)
Design process	Children were able to complete every single part of the design process with close guidance	Children could not fully implement exactly what they had planned at the early stage	Children were able to express the intentions, rationales, and features of their plans and execute the plans accordingly
Representation	Children could provide a single meaning for a color or a geometric figure	Children could provide multiple meanings for a color or a geometric figure	Children used different polygons to build the designated objects based on different colors or geometric figures and create a series of meanings
Control structures	Children chose the appropriate materials for building a tree using a simple model with two components	Children were able to specify the desired sizes of their shapes to create a designated object using a model with more than two components	Children determined which units should be moved or kept in place using a relatively complex model
Debugging	Children could decompose the designated objects by recognizing polygons and counting numbers with close guidance	Children could decompose the designated objects by recognizing polygons and counting numbers with some guidance	Children could decompose the objects into precise numbers of different geometric figures
Algorithms	Children demonstrated their understanding of the concept of sequential order under close instruction	Children could draw their sequential order as a four-slide storyboard with guidance	Children could draw the sequential order as a six-slide storyboard with very limited guidance
Modularity	Children broke down the circles for the designated objects into different slides with close guidance	Children designed a combination of components for each frame	Children broke down the designated objects into different photo slides by following their storyboards
Hardware/software	Children could tell that a smartphone has a photo-taking purpose, but they could not operate it very well	Children could take photos by using smartphones with some guidance	Children could take photos by using smartphones without any guidance

Facilitating children's computational thinking through animation arts

An in-depth interview protocol was designed to elicit the participating teachers' understandings of CT and difficulties in implementing CT activities. After animation-making activities, 10 teachers were invited to attend a 30-minute individual interviews. A total of 300 minutes of audiotaped interview data was collected. The interviews will be transcribed, coded, and analysed to generate thematic networks (Attride-Stirling, 2001). To minimize researchers' biases, two separate researchers conducted the data analysis process. Any discrepancies in their analyses were carefully examined, leading to a consensus on the final categorization.

The concept of CT was not clear to all teachers. The following are the definitions that teachers made in response to what they understood by the literal meaning of CT.
"CT is a mindset for problem solving." "CT is a way to help our brains develop and cope with problems." "CT is a way to develop mindsets." "CT is using some math concepts to enhance children's logical abilities." "CT is about developing children's minds with methods that include technology content." "CT is using computer software to think about something." "CT is a series of mathematical concepts."

THANK YOU

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