A rationale for creativity and critical thinking in KIT Theatre's Adventures in Learning

ED HILL
CAUSEWAY EDUCATION
info@causeway.education
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Causeway Education was commissioned for this project by KIT Theatre. It draws on observations of five KIT 'Adventures in Learning' delivered in five separate primary schools across London and Essex, between October 2020 to December 2021.

KIT Theatre and Adventures in Learning

"Our mission is to make playful, immersive theatre for, by and with young people which improves their relationship to learning and develops their empathy, resilience and critical thinking.

At the heart of KIT's practice are Adventures in Learning, interactive stories which erupt in classrooms and cultural venues using immersive theatre and game mechanics to deliver formal learning and develop creativity. Informed by pedagogical practices such as Mantle of The Expert, the Adventures in Learning model has been honed over 10 years and experienced by more than 15,000 pupils across the UK."
(https://www.kittheatre.org/)

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1. OBJECTIVE

The objective of this project was to reinforce and build on an evidence base that indicates a KIT Theatre Adventure in Learning (AiL) provides a unique setting, within which participants can develop creativity and critical thinking skills. A previous evaluation, of an individual adventure entitled *A Cat Escapes*, saw the development of creative thinking and problem-solving skills in the study groups; concluding that the flexible and creative thinking shown could 'be linked in part to a certain style of interaction promoted by *A Cat Escapes'* (Holmes, 2014, p. 17). Holmes noted that although the study size was small, conclusions indicated that 'the "adventure in learning" facilitated the development amongst pupils of particularly creative thought pathways' (p.3). To understand then, if this specific organisation of learning can be seen across KIT Theatre's offering of activities, the environment created with and by participants of an AiL is worthy of closer examination.

2. EXECUTIVE SUMMARY

- Data was gathered through observation of the delivery of 5 KIT AiL within 5 primary schools in London and Essex.

- Overall, analyse showed that KIT AiL fulfilled all the OECD design criteria for activities that foster creativity and critical thinking.

- Through the "atmosphere of logical convergence" that exists within an AiL students are given strong motivation to learn. The immediate 'real-world' world justifications for activities facilitates content and procedural knowledge development.

- A central strength to the AiL format was its structure that aids in the development amongst cohorts of true pupil agency grounded in two key features of the experience:
    I.   the expectation for students to co-design the narrative and solution to problems raised in an AiL;
    II.   the requirement to work collaboratively and critically with the differing perspectives taken by their peers.

- While individual AiL activities and interactions were seen to also allow for strong skill development, a key strength of the AiL format is that during an adventure, the school environment created is particularly conducive to development of creativity and critical thinking skills in young people.

3. INTRODUCTION

The major focus of this project looks at the development of creativity and critical thinking within primary aged students. Therefore, it is beneficial to first understand the current motivations for developing these skills in young people and theoretical understandings of their development within a classroom.

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i. Why creativity and critical thinking matter

The Organisation for Economic Co-operation and Development (OECD) in their report 'Fostering Students' Creativity and Critical Thinking' (2019), states that both skills are 'becoming increasingly important in the labour market' (p.18). Their economic arguments focus on how skills that are 'less easy to automate' will become ever more valuable as the digitalisation of society progresses. The role of education then, and therefore schools, needs to go beyond transferring knowledge but support leaners to become independent thinkers capable of contributing and adapting to new innovations. Similarly in their 2020–2030 strategy 'Lets Create' (2021) the Arts Council England (ACE) commits to supporting skill development due to their recognition of a workforce demand:

> 'Employers from all industries and sectors spoke of the value they placed on creative skills and critical thinking in their workforces, and over the next decade, we will work to ensure that those skills are developed more effectively in young people.' (p. 34)

Central to both understandings, is also the investment in creativity and critical thinking to respond to the growing societal challenges of today. ACE (2021) sees how 'creative potential' can be key in targeting 'inequality of wealth and of opportunity, social isolation and mental ill-health, and above all of these, the accelerating climate emergency' (p. 4). Investment then, in the development of these skills in schools is seen to spark future involvement in civic life. The OECD write:

> 'Tomorrow's schools need to help students think for themselves and work with others. They have to grasp the limit on individual and collective action and become better at seeing and understanding our own perspectives and the world around us.' (OECD, Vincent-Lancrin, S. et al., 2019)

ii. Creativity and critical thinking in a school setting

Despite this agreement on the importance of fostering creativity and critical thinking there is less agreement on how to teach for these skills. Craft (2001) gives warning that 'creativity may be impeded where there is undue time pressure, over-supervision, competition, or where choices are restricted and evaluation is expected' (p25). This challenges the idea that creativity or critical thinking can only be developed and tested within specific disciplines. The OECD (2019) put forward 'the domain-specific' view, looking at creativity and critical thinking as 'complex cognitive skills' (p.130) whose 'development relies on adequate pedagogical and assessment approaches' (p.131). Therefore, it is the design of the activities and creation for a specific supported time and place that allow these skills to grow.

The OECD lays out the following 8 design criteria:

      i. Create students' need/interest to learn
     ii. Be challenging
    iii. Develop clear technical knowledge in one domain or more
    iv. Include the development of a product
     v. Have students co-design part of the product or solution
    vi. Deal with problems that can be looked at form different perspectives
   vii. Leave room for the unexpected
  viii. Include time and space for students to reflect and to give and receive feedback

OECD Design Criteria in PDF form:
[design-criteria-for-activities-that-foster-creativity-and-critical-thinking.pdf (oecd.org)](#)

Their design criteria 'seek to align lesson plans with a focus on creativity and critical thinking with some of the major principles underlying effective learning' (p.132). Used successfully, they allow for conditions that develop growth mindset in students and an environment where 'students are willing to take the risk of sharing their personal ideas '(p. 145) and provide a universal framework for activity design.

4. METHODOLOGY

This project sought to evaluate if AiL could be seen to fulfil the 8 design criteria as laid out by the OECD for a successful activity 'in which the goal of developing student creativity and critical thinking skills is compatible and supports curricular content delivery' (p132).

Participant observation was used, with unstructured observation being selected to allow for the natural dynamic nature of AiL to be observed. Although the evaluation would focus on the 8 OECD design criteria this reflexive approach allowed for capturing the variety of events, both scheduled and the unpredictable participant response, that occur during an AiL being delivered in practice. A sample of 5 projects was selected to ensure that trends could be analysed across the range of KIT Theatre delivery methods.

Observations were conducted under the premise of a being a trainee teacher. This meant that, on occasion, involvement in classroom activities as an adult helper was required, which however often allowed for closer engagement of participant responses to KIT interventions. Therefore, research was conducted in agreement with Oakley's (1991) 'mythology of "hygienic" research' (p266), that states that researcher and subject accept the other's presence and the aim of a invisible 'complete observer' is not necessary.

The five projects observed are below, with their abbreviated name used in observation findings included [inside square brackets]:
(*see https://www.kittheatre.org/adventures-in-school*)

1. Evacuee's suitcase [WW2] – observed at an Islington Primary School, October 2020
   - A sequential adventure: Year 6 students discover a suitcase with items belonging to a WW2 evacuee child and invite them to their school.
2. The Promise [Promise 1] – observed at a Southall primary School, May 2021
   - A sequential adventure: Year 3 students correspond with a story book character and invite them in under their role as a conservationist to persuade a developer not to build on their local green space.
3. The Promise [Promise 2] – observed at a Kensal Green Primary School, May 2021
   - As above.
4. Fire of London [Fire] – observed at a Canvey Island Primary School, November 2021
   - A one-off Inspiration Day: Year 2 students write to comfort the instigator of the great fire of London and send their letters back through a time machine.
5. Victorian Schooling [Victorian] – observed at a West Hampstead Primary School, November 2021
   - A sequential adventure: Year 3 students plan to time travel to Victorian England, but instead transport a Victorian School Mistress into their own classroom.

5. OBSERVATIONAL FINDINGS

The examples selected below are indicative of the types of interactions observed across the 5 AiL. They are grouped under each of the 8 OECD criteria for activities that foster creativity and critical thinking.

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i. Create students' need/interest to learn

The OECD state this criterion 'usually implies to start with a big question […] or unexpected situation' (p132.). This feature was seen at the centre of each AiL, from the improbable discovery of a suitcase's unexplained contents [WW2] to the extraordinary arrival of a professor with a time machine [Fire]. Set-ups lasted beyond an initial shock value; arrival at school on a morning of the [Victorian] adventure it was audible to hear students chattering about their visit back in time even before getting into a classroom. The 'reality' of their impending trip went beyond excitement to see their peers dressed up. The class themselves silently set the expectation to stand behind their chair whilst answering the register with whispers of, "shhh, don't talk or we'll get the cane" [Victorian] being repeated around the room. The prospect of arriving in Victorian England drove their interest, for example with later activities discussing appropriate formal greetings based on a hierarchical society.

Within [Promise1 & 2] both observations saw students driven by their connection to a now living story book character (Emma) to explore urbanisation and look at real environmental implications in their own locality. Whilst in an activity planting seeds students spoke to Emma; "I have accepted your promise" [Promise 1], "See the wonderful plants we've grown and will plant around the world" [Promise 1]. As the AiL unfolded students learnt through Emma of Mr Stark, a developer planning to build flats on their local park. Throughout poetry writing and wildlife surveying aimed at changing Mr stark's mind, the AiL gave students the impetus to learn:

> "If he says no…I won't take that as an answer. I just won't… *I'll* say no." [Promise2]

> *Student* "What if he doesn't"
> > *Teacher* "*You* have to convince him"
> *Student* "Hmm, I'll explain to him about building" [Promise 1]

Here the teacher is affirming the students' confidence in the AiL, confirming the real-life applications to the work students are doing and through this their need to learn. AiL centre on creating an immersive narrative, with elements either plausible or fantastical, that draw students to learn through structing educational activities with real world consequences. This report would suggest that this unique setting could be termed an '**atmosphere of logical convergence**'. The big environmental questions raised in [Promise] are kept central to the AiL development and students 'return to these initial questions several times as the activity unfolds' (p.132) as suggested by the OECD framework.

ii.   Be challenging

As well as captivating the students' attention, the scenarios and activities encountered in an AiL stretched the children. During one session of the [WW2] AiL, the class teacher set students up in groups on a research task with freedom to assign roles and their focus; letting them know, 'I'm not giving you too much guidance'. Due to an AiL allowing the teacher to draw on an external motivation for the children's tasks, they are often also permitted freedom beyond their normal classroom structures. In the case of the [WW2] research task, students were all praised after for their maturity in rising to this challenge. Privately the teacher also continued to share pleased surprise in the success, 'this is the first time we have attempted this kind of activity'.

Content was seen to stretch participants though the AiL requirements to apply their learning in a new context. Within [Fire], students' curriculum had developed understanding of the facts of the Great Fire of London, and this was required by them when empathising with the guilt of its unwitting instigator that they were hearing, "It was the fire who caused the problems". Considering the event with their understanding of its historical context allowed them to generate creative ways to show off the grasp of the topic they had.

> "No, it would make him sad to sing Fire, Fire"
> "We could make our own"

Each AiL is designed to put students in the centre of a developing scenario that gives them challenging goals, that play out in real time, making their successes feel even more worthwhile.

iii.   Develop clear technical knowledge in one domain or more

This OECD criterion draws on the idea that 'there is no such thing as content-free thinking' (p.133) and clarifying ideas already suggested above, showing where AiL tasks often require the use of both content and procedural knowledge. From their research task in the [WW2] AiL students moved towards creating posters that would form the basis of a presentation to be delivered to the now grown-up 'real-life' owner of their found evacuee suitcase.

> *Teacher* "Imagine if Richard Alcott came and he said, could you just clarify and then you don't know. So, make sure you're clear on what your facts mean".
> *Student* "We can get more facts; we've got to google more facts".
> *Teacher* "He was already there; he knows these things happened so stats will make things more interesting. "

The activity here requires students to develop their historical understanding, but the motivation is distinctly different from a typical classroom lesson. The teacher can draw on the upcoming visit of the 'real life' Mr Alcott to not only encourage students' own

understanding, 'make sure you're clear', but also to then refine how students will approach sharing this information with him, 'make things more interesting'.

Students were seen to enthusiastically respond to such reminders and on presentation day the delivery is not a mocked-up experience, but for them a real opportunity to hone these skills, "We made these posters just for you, so please enjoy". Moreover, it can go even further, and is one where the 'real-life' Mr Alcott, being aware of the presentation skill development opportunity, is also an enabler for the learning environment, offering constructive and highly supportive feedback. On the eventual delivery day, he not only watches, but actively demonstrates good projection and students respond to calls to "speak up" and beam at his reciting of their most effective presentation sections. The established environment of an AiL is indeed a curated one, where technical and procedural knowledge is key to success and this 'emphasis on content knowledge does not conflict with higher order thinking skills'. (OECD p.133).

iv.   Include the development of a product

Defined as a way to make 'creativity and critical thinking process more observable' (OECD p.133), throughout an AiL participants create products of their individual and whole class creation. Whether these are formative and reflect a developing stage in the AiL, London landmarks represented through tableaus [Fire], or are the culmination of the process, as in the presentations described above [WW2]; they allow students to visualise what they are learning and show the progress they are making or have finally made.

Early in the [Promise 1 & 2] students write letters to the developer Mr Stark, putting down their reasoning for opposition to building on their park and practicing their persuasive writing. The planning of their writing let students prioritise their personal reason behind the opposition, some speaking of nature, "No green land left, and it will be more miserable", the mental health benefits "You're happy, we have fun outside", and some of the public access, "That's where we do sports day". In their discussion of the use of language to include in their writing students employ creative devices to create more impact, "We will fight back, we will show our anger", "How will you sleep at night if you do it?", "You could say you'll go from popular to Mr Nobody". By going through this process of collectively generating arguments there is a space for students to experiment with ideas and refine their own approach.

> Student 1 "We could put up posters in the park."
>   Student 2 "Yeah, to persuade whatever his names…"
> Student 3 "Hmm, we could put some pictures in our letters"
>   Student 2 "That's a really good idea" [Promise 1]

After the above discussion students within this class illustrated their letters with images of flowers and happy children outdoors. Looking at their final product one child exclaimed "When he reads this, he will see we love nature".

v.   Have students co-design part of the product or solution

As shown above student agency was seen to often be at the heart of an AiL. More than the final product involving co-design, the progression of the AiL itself was often determined by their agreement. For example, participants of [Promise 2] went on to refer to themselves from one student's suggestion as 'Wildlife warriors', a name that became integral to their experience of the AiL.

The level of student investment and agency along an AiL, was exemplified often by their reaction to the resolution. To prompt the responses below students experiencing the [Fire] AiL had just seen that their letters and work had indeed been impactful on the mindset of the fire's starter. Having sent everything back through the time machine a response had appeared naming the students' school and thanking them, "they are my heroes". The cohort erupted in cheers of "we did it" and rounds of clapping.

> "I cannot believe what has happened"
> "It feels like a dream."
> "Best day of my life, I'm glad we changed his feelings"
> "I like it when he is happy."

Although the use of a time machine was highly prompted, and part of the narrative of this AiL, unsurprisingly the suggestion did indeed first come from a student and was then collectively agreed upon. Due to this, each student was then able to devise and write their own letter, and therefore, the highly personal nature of some of the above responses to their eventual success is very understandable. Every student can see and, in some cases, really feel their direct influence on the solution. The narrative of the AiL continues to exist in this 'atmosphere of logical convergence', the presence of a time machine or its owner is not queried by staff or of course any KIT adults present. This has then allowed the students to take full ownership of where they have directed the events and in this the AiL goes further than giving them this agency, but also has developed an environment in which their creative output is rewarded and their work fruitful.

vi.   Deal with problems that can be looked at form different perspectives

As has been shown, many aspects of an AiL involve students collectively discussing how to take steps towards a solution and engaging in conversations which see them sharing and testing ideas. A single solution is not always clear and often to reach it participants will need to not only work amongst their peers but get to a point where they understand and have considered an opposing view.

Within the [Victorian] AiL the Victorian teacher who arrives in their school brings historic attitudes and beliefs with them around gender and education. Students are not able to simply dismiss these but are required to interact with their visitor on a personal level and use their own critical thinking in how they can persuade this teacher to see things differently. Although initially shocked by her severity, students initial fear of the teacher didn't take long to switch to a motivation to send her back with changed views, "If one more woman joins them, they might get the vote quicker". The OECD states these complex

problems 'requires students to come up with their own interpretations of the task requirements' (p.134). Here, this aspect of an AiL was clear with initially only one student quietly suggesting "we could listen to her first". Once this level of debate had been agreed there was space for many approaches from the students to convert the new teacher to their way of thinking. Some tried asserting that she was less knowledgeable than them in this period so should therefore automatically accept their views, "You don't know a lot, even the queen has changed". Others tried to impress her through sharing the new liberties she would have, "You can vote as well, you can pick the prime minster", and others tried to tackle the issues she has with their behaviours, "Can I explain why we are allowed to ask questions?". The environment of the AiL allows for all students' approaches to problem solving to be equally valid. It is not one individual method that eventually convinces the Victorian teacher to see things from the students' perspective, but their collective conversation. An AiL is delivered in a space where all students can have a place to justify their approach and learn from witnessing the differing perspectives taken by their peers.

vii.   Leave room for the unexpected

Arguably this criterion could be said to be most clearly noticeable in the underlying principles of a KIT Theatre AIL. Holmes (2014) referred to the idea of 'plausible pedagogic ignorance', where class teachers can distance themselves from the AiL delivery in school, due to the established communication and facilitator work of KIT staff students interact with. Across all observations it was apparent that a highly successful nature of the environment created by an AiL, that encouraged students to participate, was supported through the ongoing buy-in from staff. Teacher reminders of a day's timetable being upended due to the arrival of a KIT communication or team member were a constant, "I don't have a learning outcome as I didn't know this was going to happen" [WW2]. Activities were delivered as if as much of a shock to staff as it was to students, "Normally we would use a dipper, but this was sprung on us" [Promise 2]. This opened the environment for teachers to respond to student direction.

At the beginning of the [WW2] AiL the class spend a lesson exploring the contents of the evacuee suitcase they have found. Within this class each student had freedom to search through the items and find their own angle of interest. A small group of students gathered to the front looking at the dates written on items and eventually doing long division to work out how old the evacuee was in the present day. Two learners gathered, listing all the things they would want to know more about, "I would want to ask him so many questions" and several of the class pick up items and begin to draw their own interpretations of them. This dynamic set up is left by the teacher for a portion of the lesson before moving to an activity in their workbooks. A willingness was shown by the teacher to follow the unexpected outcome that is part of an AiL, for example they at one moment took the time to make all the class aware of the mathematics exercise taking place. Each leaner was given this space to take in the suitcase contents and their personal ideas and responses were all held equally valid by the design of the AiL.

viii.   Include time and space for students to reflect and to give and receive feedback

Due to the establishment of 'plausible pedagogic ignorance' for a teacher, as discussed above, within an AiL environment, feedback must be approached cautiously so as not to expose the setup of the adventure itself. However, this is not to say that well crafted moments for peer feedback are not possible by staff and additionally to this the inclusion of space for KIT facilitators to provide feedback was noticeable.

During the [Promise 1&2] the arrival of 'Emma' the conservationist into the schools allowed for a legitimate individual to discuss and critique the ideas students had for debating with the developer 'Mr Stark'. Both observed deliveries of this AiL saw Emma be able to hold mock debates and act as an antagonist to give students a chance to practice and refine their ideas before the 'real thing'. Students could see the success of certain individuals and recognise both their own strengths and areas for improvement. Building on this, it was learnt that after the official delivery of the AiL in [Promise 1] school, a follow-up group discussion on activism was held. Students discussed the relationship between age and our ability to make a difference, reflecting on their own recent achievement, "We changed Mr stark's mind", and other young environmentalists like Greta Thunberg. Therefore, although the need to maintain the reality of an AiL means that learner feedback isn't built in as the concluding feature, there are spaces throughout, particularly within an episodic adventure, and AiL's content coverage does lend itself to having future space for a reflective piece.

6.   CONCLUSIONS

The observations made of KIT Theatre's AiL delivery in schools shows strong evidence that they fulfil the design criteria for activities which foster creativity and critical thinking. There was strong indication that beyond individual activities, it is in fact the environment created for an AiL that is particularly conducive to the development of these skills in young people. Students are supported to explore multiple solutions to problems they encounter and able to do this whilst drawing on specific curriculum content and often developing additional skills through the creation of a product.

Evidence from these observations in fact could suggest that in some areas the KIT AiL exemplifies the criteria laid out by the OECD.

> "Lesson plans should maintain a substantial degree of openness and room for student agency, which is not only compatible with, but also supported by, the presence of well-defined boundary condition for collaborative experimentation and play." (OECD, p.134)

The unique 'atmosphere of logical convergence' that is shared across all AiL, despite their varying subject focus or duration, resonates with the "domain specific" approach to developing creativity and critical thinking put forward by the OECD.

7. RECCOMENDATIONS

- KIT Adventures in learning are built around a highly successful model for delivery. The unpredictable direction the activities can take allows for students to truly engage with the content and, using their creativity and critical thinking skills, become the driving force behind its direction. The unpredictable nature of this means it can be hard to generate support resources for SEN or EAL students as this could expose the teacher's involvement in the AiL. However, there were also indications throughout this work that learners in these groups at times benefited from the varied learning environment created in an AiL. Further attention could be paid to whether all learners within a class access the AiL experience at the same level and research undertaken to explore how support resources to differentiate in tasks could be generated.

- This project has shown that the design of AiL allows for an environment heavily conducive to development of critical thinking and creativity skills. Despite projects taking place across schools with differing familiarity with KIT and the exact project being delivered, all projects observed showed high levels of engagement and impact on learners. However, some staff did show more comfort within their adaptability to the delivery of an AiL. It would be beneficial to look at, beyond the AiL design, what are the 'expectations' on a *school* for a successful delivery. This could lead to the generation for support resources for teachers and indeed training materials for the more surprising scenarios they could encounter.

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