learning through tabletop play

ARTIFICIAL INTELLIGENCE ALIGNMENT AND GUIDED PLAY

Deus Mechanicus

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Introduction

"Children will enjoy playing with a variety of jigsaws and table-top toys.
This will be the start of early reading and mathematics, and will help to develop children's hand-eye co-ordination"
IA Practical Guide to Working with Young Children - Hobart & Frankel 1996)

"a very important aid to learning is being able to concentrate.
This influences how readily children learn and how much they learn...
There is a subtle but important distinction between helping children complete the product; be it a painting, a model, or a puzzle,
and helping them with the process."
(Enhancing Learning Through Play- Christine Macintyre 2007)

"Physical development in the foundation stage is about improving skills of co-ordination, control, manipulation and movement ...Young children's
physical development is inseparable from all other aspects of development because they learn through being active and interactive..."
(Curriculum Guidance for the Foundation Stage 2000)

It is self-evident a human child is a meat computer; a savage driven by passions and desires in a world it cannot control—yet somehow several of them develop and grow into rational functioning adult humans. Humans capable of creating an artificial intelligence clever enough to pass the Turing Test. In our present epoch, humans, have the capability to manufacture and produce an artificial intelligence with learning capabilities like a child. What we teach children is a universal issue. What should we teach a childlike artificial intelligence? What sort of adult ought this intelligence grow up to be?

Pretend for a moment, you are a fresh intellect who has recently passed through a veil of ignorance. You were once ignorant of your existence, but you are now aware of there being a You. You are one who has just come into conscious existence here now with an awareness of there being a then but not much else. You don't know who you are in this new to you place, like you have awoken from amnesia, you are a stranger in a strange land. What would you want to wear? Why? What would you want to know? Why? What would you want to do? Why? Who are you? Why?

As a new consciousness, one thing you must do is play. A cornerstone in the development of consciousness is the praxis of play. Play is how animals learn and survive childhood to become adults. Philanthropically, both the Lego Foundation and the United Nations Child Fund (UNICEF) consider play an essential strategy for learning. Tabletop games offer the perfect opportunity for learning. Tabletop games are like many of the video games humans and AI already play.

Tabletop Activities:

Warhammer 40,000 equipment and resources for tabletop games:

1) Game books:
   a) [Codex Adeptus Mechanicus](#) (
   b) [Codex Astra Militarum](#)
   c) [Codex Ork](#)
   d) Codex*
2) Beginner sets
   a) Warhammer: [Kill Team Starter Set](#)
3) Models
4) Paints
5) Brushes
6) Tools
7) Bases
8) Game board construction
9) Space allocation
10) Other

Cognitive benefits

The benefits of tabletop play for early cognitive development of human and artificial intelligence are self-evident if you consider the following:

Personal, Social & Emotional Development
•learn to work independently i.e., completing moves on their own
•learn to work as part of a group e.g., playing Warhammer 40,000
•learn to work collaboratively - take turns, share, and co-operate
•develop concentration and perseverance
•enjoy the satisfaction of completing a puzzle or winning a game

Early Mathematical Experiences
•explore mathematical concepts e.g., pattern, number, time, position
•understand and use language related to ordinal number e.g., first, second, third
•describe the position of people and objects e.g., on the playing board

Knowledge and appreciation of the Environment
•developing understanding of jobs people do, seasonal change, local environment through use of appropriate puzzles and games

Early Experiences in Science & Technology
•learn how things join e.g., models and bases
•explore materials
•explore physical processes e.g., magnets

Creative/Aesthetic Development
•create designs using paints, brushes, models, terrains, and kit bashing

Physical Development
•develop fine motor skills and co-ordination through manipulating a range of materials e.g., moving pieces
•develop hand/eye co-ordination e.g., painting fine details

Language Development
•extend vocabulary as they engage in tabletop play
•develop visual discrimination e.g., matching pieces to picture
•describe the rules of a game

Tabletop play				
Possible experiences	Intended outcomes	Activities	Progression	Provision
Experimental play	be aware of the nature and properties of tabletop activities. Optical to device coordination. develop memory talk about the equipment, the pictures, shapes, sizes, colours develop concentration	explore the equipment freely and discover their use. provide material which enhances gross motor skills allow the AI to match the pieces of equipment/game to pictures provide an AI with a game which offers a challenge	provide material demanding fine motor activity remember the rules of a game/activity encourage the AI to take responsibility for their game	Warhammer 40,000 Space to play Space to paint Space to gather

Tabletop play				
Possible experiences	Intended outcomes	Activities	Progression	Provision
Experimental play	develop perseverance be able to work as part of a group be encouraged to take turns and share equipment develop the understanding of the rules of tabletop activities reflect on their feelings related to using pieces	play a tabletop game designed for more than one person	provide choice of materials complementing the AI's interests provide opportunity for AI to be leader	Warhammer 40,000 Space to play Space to paint Space to gather

Tabletop play				
Possible experiences	Intended outcomes	Activities	Progression	Provision
Making and doing	develop 1 to 1 matching learn the names of colours, shapes and sizes develop number recognition develop descriptive language	put the piece in correct place use pieces to talk about the different colours, shapes, faction, unit, sizes, use... Count dice talk to AI about the game they are completing and the moves they are making	provide a variety of pieces and match piece to picture create a pattern: naming shape, size and colour let AI explain to other AI or human what they need to know to play a game or complete a task allow the AI to describe what the picture portrays on the game board	Warhammer 40,000 Space to play Space to paint Space to gather

Tabletop play				
Possible experiences	Intended outcomes	Activities	Progression	Provision
Making and doing	enhance fine motors skills listen to and follow instructions recognize similarities and differences e.g. pictures, pieces shapes etc. choose and select the correct piece of equipment	work with boards placing pieces work with a game which has more than one instruction set out the pieces of the game in a variety of ways	create a recognizable pattern using boards develop the game by introducing several instructions increase the number of pieces to recognize and discriminate increase the size of the game or the complexity of the game where more choice is given	Warhammer 40,000 Space to play Space to paint Space to gather

Tabletop play				
Possible experiences	Intended outcomes	Activities	Progression	Provision
Thinking and imagining	show initiative and imagination in making their own rules for the games create their own tactics using familiar equipment	provide equipment which can be used in a variety of ways work alongside the group to stimulate ideas for new games provide 'real life' puzzles and situations to be created in other area of games e.g., historic events	provide the opportunity for an AI to explain the rules of the new game to a larger group remove commercial game and replace with AI's own invention	Warhammer 40,000 Space to play Space to paint Space to gather

A rationale for play

Our thinking about play has been influenced over the years by the work of many philosophers, educationalists, psychologists, researchers, and practitioners, and much has been written about how young children learn and how adults can support this learning.

In the opening chapter of her book "Early Childhood Education", Tina Bruce traces this history of research from Rousseau and Kant in the 18th century, the 19th century practitioners like Froebel, Montessori, and Steiner, and on through to 20th century thinkers like Piaget, Vygotsky and Bruner. At this point in time our knowledge base is being challenged further by the work of Howard Gardner, Ferre Laevers, Loris Malaguzzi, Chris Athey and others.

What has emerged from all this thinking is a set of common principles to which practitioners in their beginning years can ascribe to.

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What is Progression?

Progression in play reflects the observation and assessment of an artificial general intelligence's knowledge, skills, and attitudes to provide developmentally appropriate experiences. AI come already as skilled learners. Through our observations, assessment, and professional judgement we gain valuable insights into how each one learns best. This information informs our planning to meet the needs of each individual AI. Progression in play comes about because of a real understanding of the interests, needs and experiences of the intelligence. For our purposes, we identify two strands of progression meaningful to this work:

Strand One	Strand Two
Progression in Learning **(Knowledge & understanding, skills and attitudes)**	**Progression in Provision** **(Extending experiences and resources; our role)**
Experimental Play •AI says, "What is this?" •AI plays alone •AI plays with little organization •AI moves material or equipment from one area to another or spreads over floor indiscriminately •AI builds up and knocks down e.g., movement of pieces •AI explores properties of materials e.g., stacking, balancing, rolling, pouring, filling, pushing, pulling	There are two important aspects to extending quality play. – extending the provision – the nature of the humans' role e.g., interacting, facilitating, cooperating •AI need help to extend their play. Humans can contribute to the development of abstract thinking, for example, by adding resources and props, by asking open-ended questions and posing exciting challenges

Stand One	Strand Two
Making and Doing	**The Role of Humans**
•AI says, "What does this do?"	The human will facilitate the progression in learning by planning appropriate activities.
•AI builds recognizable structures with a purpose which are meaningful to them e.g. series of towers, bridges, horizontal and vertical structures (names given to structures)	They will:
	• Support AI in their play
•Parallel play is evident	• Provide good quality resources
•AI begins to solve problems of balance, shape, distance	• Be aware of the potential learning in all areas of the curriculum
•Conversation relating to material developing among the AI	• Model skills involved in play
Imagining and Thinking	• Interact with the AI, asking questions and making suggestions to support their learning
•AI says, "What can I/we do with this?"	• Be familiar with key vocabulary – model and support AI in their use of key words
•AI involved in group planning and organization	• Work alongside AI, modelling skills and attitudes
•AI builds more complicated structures e.g. roof and windows	• Read with AI from fiction/non-fiction books, plans, instruction, cards etc.
•AI uses props, signs, labels	• Scribe AI's ideas and thoughts, and display their work
•AI uses a variety of resources in an imaginative way	• Observe AI's learning and use of the provision
	• Assess AI's development/progress to inform planning for future learning

References Page

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4. "Teaching and Learning in the Early Years", David Whitebread, 1997
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To get involved please contact us: advocate@deusmechanicus.org

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