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Artificial Intelligence and the Future of Literacy: Navigating a Post-Literate World

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Introduction

- The evolution of communication mediums has profoundly influenced human cognition and societal structures.
- As society transitioned from oral to literate cultures, the way humans communicated, learned, and understood the world fundamentally changed.
- In recent decades, the mediums through which information is conveyed have become increasingly diverse and fluid, encompassing textual news, chats, videos, and podcasts
- Artificial Intelligence (AI) technologies represent the latest frontier in this evolution. AI now enables the creation and delivery of content across various forms, from narrative text to voice-over to video ads, based on minimal input from users (Kaplan & Haenlein, 2019).
- This capability of AI to generate media with adjustable preferences may lead to many phenomena

Theoretical Exploration - Literacy

Literacy can be understood through at least four broad theoretical lenses (Hovious, 2018):

Literacy as a Set of Skills.	Literacy is viewed primarily as a collection of individual competencies, typically focused on the ability to read and write at a functional level.
Literacy as Critical Learning.	Literacy goes beyond basic skills to include the ability to analyze, interpret, and critique texts.
Literacy as a Social Practice.	Literacy involves understanding how literacy practices vary across different communities, and how these practices are influenced by social norms, values, and power dynamics.
Literacy as a Social Semiotic Practice.	Literacy as a way of making and interpreting meaning within a society through various signs and symbols (semiotics).

Theoretical Exploration – Historical Context

Orality → Literacy → Digital Revolution

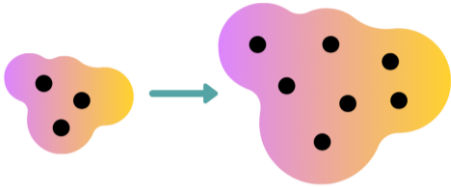
1. **Orality**
   Oral societies relied on repetition, formulaic expressions, and mnemonic devices to retain and communicate information. Oral communication fostered strong communal bonds, as it required direct interaction and participation.
2. **Literacy**
   Writing allowed for the externalization of memory, enabling the accumulation of knowledge beyond the limitations of human recall. Literate societies developed new forms of abstract thinking, critical analysis, and individual reflection.
3. **The Digital Revolution**
   Digital media introduced new forms of interaction and content creation, blending elements of orality and literacy. Texts became hyperlinked and multimedia-enriched, allowing for a more dynamic and interconnected flow of information.

Theoretical Exploration – Artificial Intelligence

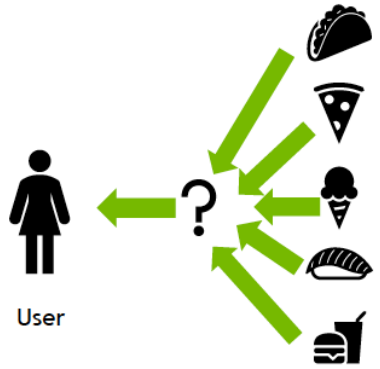
Artificial Intelligence (AI) refers to a broad field of computer science dedicated to creating systems capable of performing tasks that would typically require human intelligence.

In the context of information literacy, at least two key models of AI play vital role.

- **Generative models:** designed to create new data that mirrors the characteristics of an existing dataset.



- **Recommender systems:** personalized suggestions to users based on their preferences, behaviors, or interactions with a system.

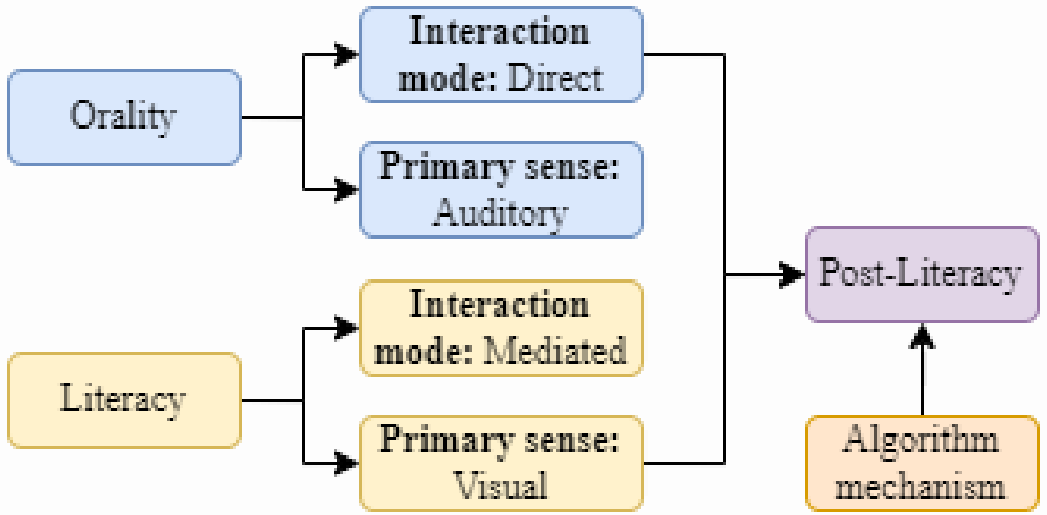


Discussion – Revolution on Texts

- Text has expanded beyond written symbols to include anything that can be "read," whether material or virtual.
- This changed with the telegraph and later the telephone, which allowed sound to be transmitted. Radio further transformed communication by broadcasting sound to many people, echoing aspects of oral tradition.
- With the rise of TV, literacy faces competition that resembles orality. TV can be seen as secondary orality, but it's only the beginning of literacy's erosion. TV and radio are still dominated by properties of literacy, as they present fragmented and contextually detached information.
- TV and radio as multimedia forms have paved the way for a new type of text called **hypertext**.
- The internet, with its hypertext, has the potential to revolutionize culture and thinking patterns just as literacy once did.

Discussion – Post-Literacy as New Form

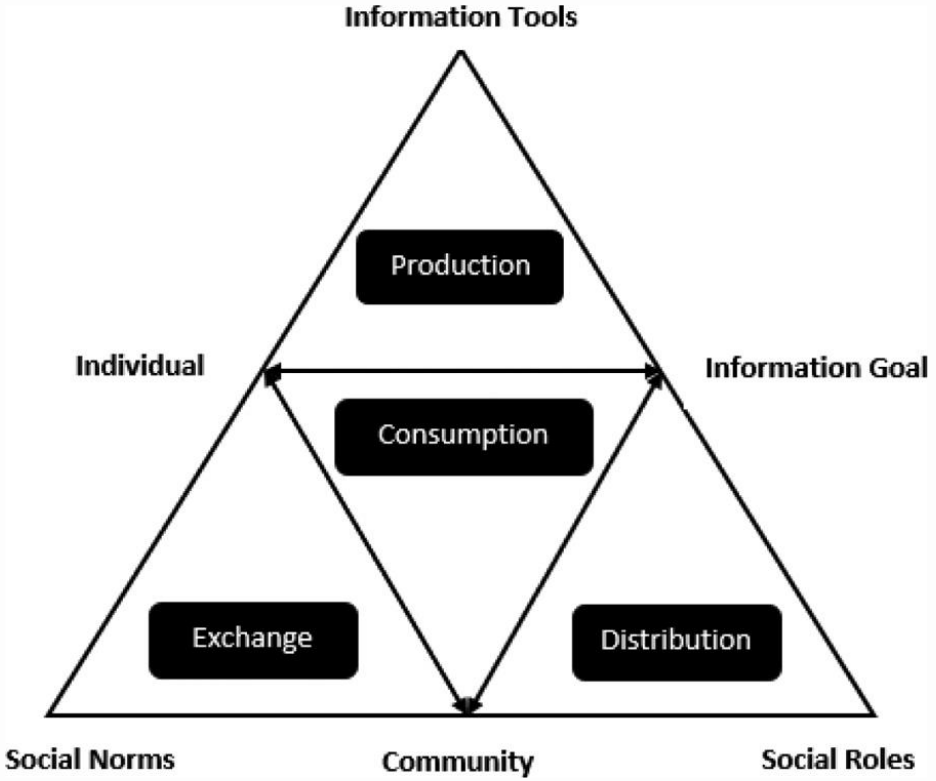
- Unlike primary oral societies, which had norms for order, the internet's hypertext environment fosters disruptive, uncontrollable interactions due to its anti-hierarchical nature.
- Despite similarities to traditional orality, internet communication remains fragmented, lacking the completeness and wholeness essential to orality.
- This condition, where literacy appears to be creating a tendency to 'return' to orality but in a new form, might be aptly termed post-literacy.



Discussion – Post-Literacy as New Form

Aspect		Form		
Essential	**Derived**	**Orality**	**Literacy**	**Post-Literacy**
Primary Sense		**Auditory**	**Visual**	**Visual**
	Presence of Information	Temporal	Lasting	Lasting
	Mind structure	Concrete	Abstract	Abstract
	Knowledge basis	Memory	Logic	Logic
	Transfer of knowledge	Implicit (narrative)	Explicit	Explicit
Interaction mode		**Direct**	**Mediated**	**Direct**
	Form of information	Holistic (subject)	Isolated (object)	Holistic (subject)
	Mind Properties	Contextual	Textual	Contextual
	Self-identification	Communal / Tribal	Individual	Communal / Tribal
	Social communcation	Reactive (synchronus)	Dialectic (diachronous)	Reactive (synchronus)
Main role in the information understanding		**Sender**	**Receiver**	**Algorithm**

Discussion – Post-Literacy as New Form

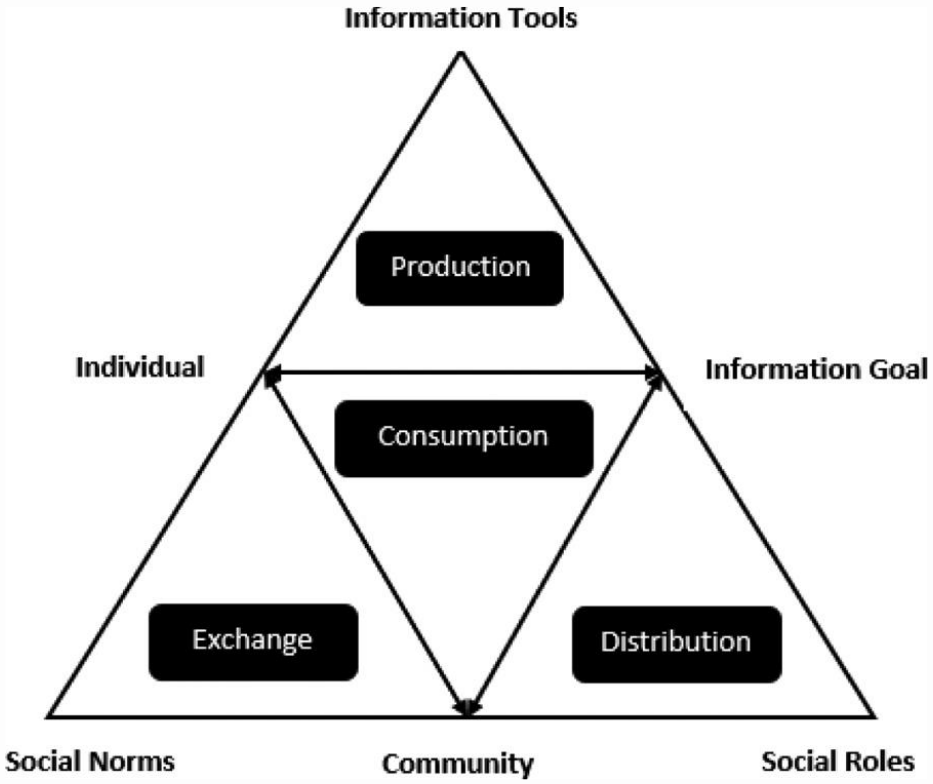


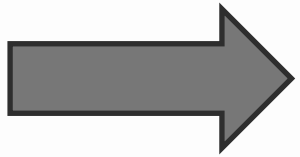
In the context of an information activity, literacy takes on a more dynamic and multifaceted role.

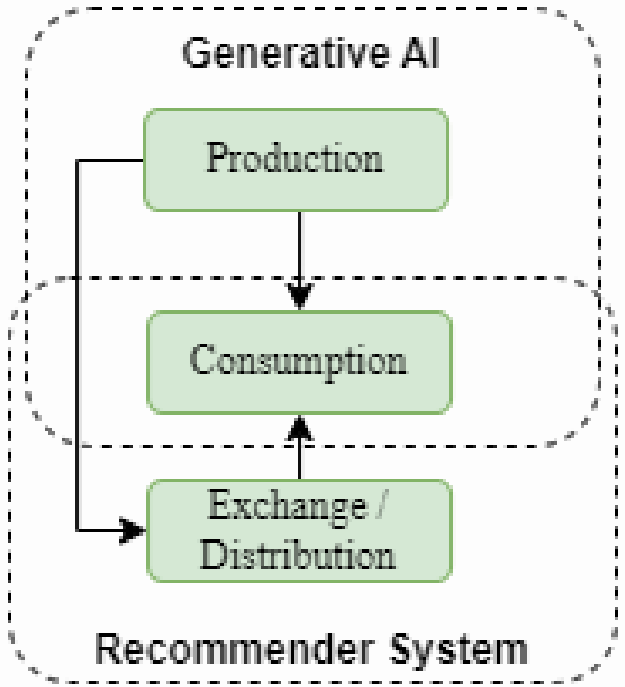
It combines elements of activity theory with the theory of information worlds to depict an information activity system, which represents a single social context or community (Hovious, 2018).

Discussion – Post-Literacy as New Form

In the realm of production, **generative models** are central, automating labour-intensive tasks and enabling the creation of novel content forms. On the distribution side, **recommender systems** optimizes how information reaches its audience. These systems personalize content delivery based on individual preferences and behaviours, ensuring that information







Discussion - Effects of AI

Aliteracy: The Decline of Traditional Literacy Practices

Aliteracy, → individuals have the ability to read but choose not to engage deeply with traditional forms of literate communication. Some cause by AI:

- Reduction in Deep Reading and Analysis
- Shift Towards Visual and Interactive Media

Transliteracy: Navigating a Multimodal Information Landscape

Transliteracy → the ability to read, write, and interact across a range of media and platforms,
AI technologies enhance this capability by integrating various media into single platforms, making transliteracy crucial for navigating and synthesizing information across multiple modalities.

Post-Literacy: The Evolution of Literacy

AI technologies facilitate this merging by enabling customized content experiences that reduce the need for deep reading and writing. This shift could de-emphasize critical thinking and memory skills traditionally linked to literacy, redefining societal values around education, intellectual engagement, and cultural heritage. In essence, post-literacy represents a blend of oral and literate traditions, shaped and accelerated by the effects of aliteracy and transliteracy.

Discussion – Future Direction

Redefining Literacy:

- As AI tools become more integrated into everyday life, the definition of literacy itself may need to be broadened.

Cognitive Load and Information Overload:

- AI's ability to deliver vast amounts of information quickly can overwhelm individuals, leading to cognitive overload. This might result in a reliance on AI to filter and summarize information, which could diminish the deep cognitive engagement traditionally associated with reading and critical analysis.

Changes in Memory and Learning:

- While AI can enhance learning by providing immediate answers and explanations, it may also reduce the need for individuals to deeply engage with and retain information.

References

1. Ong, W. J. (1982). *Orality and literacy: The technologizing of the word*. Routledge.
2. Bolter, J. D. (1991). *Writing space: Computers, hypertext, and the remediation of print*. Lawrence Erlbaum Associates.
3. Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. New York University Press.
4. Carr, N. (2010). *The shallows: What the Internet is doing to our brains*. W.W. Norton & Company.
5. Kaplan, A. M., & Haenlein, M. (2019). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. *Business Horizons, 62*(1), 15-25.
6. Wolf, M. (2007). *Proust and the squid: The story and science of the reading brain*. HarperCollins.
7. Thomas, S., et al. (2007). Transliteracy: Crossing divides. *First Monday, 12*(12). https://doi.org/10.5210/fm.v12i12.2060
8. Hovious, A. (2018), "*Toward a socio-contextual understanding of transliteracy*", Reference Services Review, Vol. 46 No. 2, pp. 178-188. https://doi.org/10.1108/RSR-02-2018-0016.
9. Gee, J. P. (2008). *What video games have to teach us about learning and literacy*. Palgrave Macmillan.
10. Freire, P. (1970). *Pedagogy of the oppressed*. Continuum.
11. Street, B. V. (1984). *Literacy in theory and practice*. Cambridge University Press.
12. Kress, G. (2010). *Multimodality: A social semiotic approach to contemporary communication*. Routledge.
13. Havelock, E. A. (1963). *Preface to Plato*. Harvard University Press.
14. Goody, J., & Watt, I. (1963). The consequences of literacy. *Comparative Studies in Society and History, 5*(3), 304-345.
15. Goodfellow, I., Pouget-Abadie, J., Mirza, M., Xu, B., Warde-Farley, D., Ozair, S., ... & Bengio, Y. (2014). Generative adversarial nets. *Advances in Neural Information Processing Systems, 27*, 2672-2680.
16. Aggarwal, C. C. (2016). *Recommender systems: The textbook*. Springer.
17. Ihsan, A. (2019). Masyarakat Pasca-Literasi sebagai Fenomena Baru Revolusi Digital. *Prosiding Sendipa, Adiwidya VIII*.
18. Smith, A. (2018). Attitudes towards AI and implications for content consumption. *Digital Media Report, 12*(2), 45-62.

- Rheingold, H. (2012). *Net smart: How to thrive online*. MIT Press.

Thank you

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