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Exploring the Potential of Design Thinking as an Approach for Exhibit Development: the Case Study of the "Motion and Stillness" Science Exhibition

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Abstract

This paper investigates the opportunities offered to exhibit developers by implementing a design thinking approach in developing science exhibitions. It uses the development of the "Motion and Stillness" science exhibition as a case study. In drawing on reflections on the exhibition development process and a subsequent practical

training program, the paper proposes an exhibit development model that embeds stages of design thinking into exhibit development. Design thinking can have a noticeable impact on the exhibit development process by fostering its iterative nature and helping museums and science centers to move towards a visitor-oriented approach. It also suggests embedding some design thinking methods, such as the divergent and convergent thinking, could foster the formative aspect of the exhibit development process.

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References

Chang, E. (2006). Interactive experiences and contextual learning in museums. *Studies in Art Education, 47*(2), 170–186. https://doi.org/10.1080/00393541.2006.11650492

Cross, N. (2001). Design cognition: Results from protocol and other empirical studies of design activity. In C. Eastman, M. McCracken, & W. Newstetter (Eds.), *Design knowing and learning: Cognition in design education* (pp. 79–103). Elsevier.

Dam, R., & Siang, T. (2020a). *What is design thinking and why is it so popular?* The Interaction Design Foundation. https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular

Dam, R., & Siang, T. (2020b). *Stage 4 in the design thinking process: Prototype.* The Interaction Design Foundation. https://www.interaction-design.org/literature/article/stage-4-in-the-design-thinking-process-prototype

Falk, J. H., & Dierking, L. D. (2018). *Learning from museums: Visitor experience and the making of meaning* (2nd ed.). Rowman & Littlefield Publishers.

Henriksen, D., Cain, W., & Mishra, P. (2018). Everyone designs: Learner autonomy through creative, reflective, and iterative practice mindsets. *Journal of Formative Design in Learning, 2*(2), 69–81. https://doi.org/10.1007/s41686-018-0024-6

Henriksen, D., Jordan, M., Foulger, T. S., Zuiker, S., & Mishra, P. (2020). Essential tensions in facilitating design thinking: Collective reflections. *Journal of Formative Design in Learning, 4*(1), 5–16. https://doi.org/10.1007/s41686-020-00045-3

Henriksen, D., Richardson, C., & Mehta, R. (2017). Design thinking: A creative approach to educational problems of practice. *Thinking Skills and Creativity, 26*, 140–153. https://doi.org/10.1016/j.tsc.2017.10.001

Hod, Y. (2017). Future learning spaces in schools: Concepts and designs from the learning sciences. *Journal of Formative Design in Learning, 1*(2), 99–109. https://doi.org/10.1007/s41686-017-0008-y

Hokanson, B., & Kenny, R. (2020). Creativity and critique as formative processes in design thinking. *Journal of Formative Design in Learning, 4*(1), 2–4. https://doi.org/10.1007/s41686-020-00047-1

Humphrey, T., & Gutwill, J. P. (2005). *Fostering active prolonged engagement: The art of creating APE exhibits*. Routledge.

Kamien, J. A. (2001). An advocate for everything: Exploring exhibit development models. *Curator: The Museum Journal, 44*(1), 114–128. https://doi.org/10.1111/j.2151-6952.2001.tb00033.x

Kendal, R. L., Kendal, J. R., Mursic, Z., Bailey-Ross, C., Rudman, H., Lloyd, A., & Ross, B. (2016). Designing for creativity and innovation in informal science learning. *Informal Learning Review, 137*(1), 20–24. https://dro.dur.ac.uk/18868/1/18868.pdf

Leister, W., Tjøstheim, I., Joryd, G., de Brisis, M., Lauritzsen, S., & Reisæter, S. (2017). An evaluation-driven design process for exhibitions. *Multimodal Technologies and Interaction, 1*(4), 25–38. https://doi.org/10.3390/mti1040025

Lindberg, T. (2011). Design thinking: A fruitful concept for IT development? In C. Meinel & R. Wagner (Eds.), *Design thinking: Understand – improve – apply* (1st ed., pp. 3–18). Springer. https://doi.org/10.1007/978-3-642-13757-0

Lundgren, L., & Crippen, K. J. (2019). Learning and the practice of social media in informal science education centers. *International Journal on E-Learning, 18*(1), 31–52.

Schein, M. (2019). *The next revolution in education: Design thinking*. Forbes. https://www.forbes.com/sites/michaelschein/2019/01/08/the-next-revolution-in-education-design-thinking/?sh=274e5d2d61c6

Silvers, D. M. (2015). *Activating the museum with design thinking: Stories from the Minneapolis Institute of Arts*. Design Thinking for Museums. https://designthinkingformuseums.net/2015/02/02/design-thinking-at-the-mia/

Smithsonian Institution Office of Policy and Analysis. (2002). *The making of exhibitions: Purpose, structure, roles and process.* Smithsonian Institution. https://www.si.edu/Content/opanda/docs/Rpts2002/02.10.MakingExhibitions.Final.pdf

Topp, K. R. (2012). *A content assessment tool for the exhibit design process, using graphic design and communication theory as a framework for generating meaningful messages* [Master's thesis. Iowa State University], Digital Repository. https://doi.org/10.31274/etd-180810-1510

Tschimmel, K. (2012). Design thinking as an effective toolkit for innovation [conference paper]. *The International Society for Professional Innovation Management (ISPIM)*, 1–20.

Wolniak, R. (2017). The design thinking method and its stages. *Support Systems in Production Engineering, 6*(6), 247–255.

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