

## REFERENCES

- Aung HH, Han TM. 2012. A comparative study of teaching anatomy using cadavers, prosected wet specimens and simulated plastic models among Malaysian undergraduates. In: Proceedings of International Research Invention Innovation Exhibition (IRIIE 2012). Kuala Lumpur, Malaysia. 2012 Feb 21-22. Poster 27151. International Islamic University Malaysia, Kulliyah of Islamic Revealed Knowledge and Human Sciences: Kuala Lumpur, Malaysia.
- Azer, S.A., Azer, S., 2016. 3D Anatomy Models and Impact on Learning: A Review of the Quality of the Literature. *Health Professions Education* 2, 80–98. <https://doi.org/10.1016/j.hpe.2016.05.002>
- CDC Global Health - Indonesia [Web Document], 2020. URL <https://www.cdc.gov/globalhealth/countries/indonesia/default.htm> (accessed 10.30.20).
- Chan, L.K., Pawlina, W. (Eds.), 2015. *Teaching Anatomy*. Springer International Publishing, Cham. <https://doi.org/10.1007/978-3-319-08930-0>
- Estai, M., Bunt, S., 2016. Best teaching practices in anatomy education: A critical review. *Annals of Anatomy - Anatomischer Anzeiger* 208, 151–157. <https://doi.org/10.1016/j.aanat.2016.02.010>
- Ejaz, F., Ryan, J., Henriksen, M., Stomski, L., Feith, M., Osborn, M., Pophal, S., Richardson, R., Frakes, D., 2014. Color-coded patient-specific physical models of congenital heart disease. *Rapid Prototyping Journal* 20, 336–343. <https://doi.org/10.1108/RPJ-11-2012-0105>
- Gharini, P., Herianto, H., Arfian, N., Satria, F.B., Amin, N., 2018. 3 Dimensional Printing in Cardiology: Innovation for Modern Education and Clinical Implementation. *ACI (Acta Cardiologia Indonesiana)* 4, 103. <https://doi.org/10.22146/aci.40855>
- Gibson, I., Rosen, D.W., Stucker, B., 2010. *Additive Manufacturing Technologies*. Springer US, Boston, MA. <https://doi.org/10.1007/978-1-4419-1120-9>
- Javan, R., Herrin, D., Tangestanipoor, A., 2016. Understanding Spatially Complex Segmental and Branch Anatomy Using 3D Printing. *Academic Radiology* 23, 1183–1189. <https://doi.org/10.1016/j.acra.2016.04.010>
- Kerby, J., Shukur, Z.N., Shalhoub, J., 2011. The relationships between learning outcomes and methods of teaching anatomy as perceived by medical students. *Clin. Anat.* 24, 489–497. <https://doi.org/10.1002/ca.21059>
- Knowles, M., 1977. ADULT LEARNING PROCESSES: PEDAGOGY AND ANDRAGOGY. *Religious Education* 72, 202–211. <https://doi.org/10.1080/0034408770720210>
- Lee, J.-S., 2012. The effects of the teacher–student relationship and academic press on student engagement and academic performance. *International Journal of Educational Research* 53, 330–340. <https://doi.org/10.1016/j.ijer.2012.04.006>
- Moore, K.L., Dalley, I.A.F., Agur, A.M.R., 2018. *Clinically Oriented Anatomy* 2788.

- Morris, J.F., 2015. Competencies for Teaching Anatomy Effectively and Efficiently, in: Chan, L.K., Pawlina, W. (Eds.), Teaching Anatomy: A Practical Guide. Springer International Publishing, Cham, pp. 39–44. [https://doi.org/10.1007/978-3-319-08930-0\\_5](https://doi.org/10.1007/978-3-319-08930-0_5)
- Nowinski, W.L., Volkau, I., Marchenko, Y., Thirunavuukarasuu, A., Ng, T.T., Runge, V.M., 2009. A 3D Model of Human Cerebrovasculature Derived from 3T Magnetic Resonance Angiography. *Neuroinform* 7, 23–36. <https://doi.org/10.1007/s12021-008-9028-8>
- Šafka, J., Ackermann, M., Bobek, J., Seidl, M., Habr, J., Běhálek, L., 2016. Use of Composite Materials for FDM 3D Print Technology. *MSF* 862, 174–181. <https://doi.org/10.4028/www.scientific.net/MSF.862.174>
- Shi, J., Fu, S., Cavagnaro, M.J., Xu, S., Zhao, M., 2021. 3D Printing Improve the Effectiveness of Fracture Teaching and Medical Learning: A Comprehensive Scientometric Assessment and Future Perspectives. *Front. Physiol.* 12, 726591. <https://doi.org/10.3389/fphys.2021.726591>
- Sommer, K.N., Shepard, L.M., Mitsouras, D., Iyer, V., Angel, E., Wilson, M.F., Rybicki, F.J., Kumamaru, K.K., Sharma, U.C., Reddy, A., Fujimoto, S., Ionita, C.N., 2020. Patient-specific 3D-printed coronary models based on coronary computed tomography angiography volumes to investigate flow conditions in coronary artery disease. *Biomed. Phys. Eng. Express* 6, 045007. <https://doi.org/10.1088/2057-1976/ab8f6e>
- Sundler, A.J., Lindberg, E., Nilsson, C., Palmér, L., 2019. Qualitative thematic analysis based on descriptive phenomenology. *Nurs Open* nop2.275. <https://doi.org/10.1002/nop2.275>
- Tack, P., Victor, J., Gemmel, P., Annemans, L., 2016. 3D-printing techniques in a medical setting: a systematic literature review. *Biomed Eng Online* 15, 115. <https://doi.org/10.1186/s12938-016-0236-4>
- UGM, F.K., 2017. *Student's Book Block A.3 CARDIORESPIRATORY SYSTEM Seventh Edition*. Seventh ed. Yogyakarta: School of Medicine Faculty of Medicine, Public Health and Nursing Universitas Gadjah Mada.
- Vorstenbosch, M.A.T.M., Klaassen, T.P.F.M., Donders, A.R.T.R., Kooloos, J.G.M., Bolhuis, S.M., Laan, R.F.J.M., 2013. Learning anatomy enhances spatial ability: Learning Anatomy and Spatial Ability. *American Association of Anatomists* 6, 257–262. <https://doi.org/10.1002/ase.1346>
- Vukicevic, M., Mosadegh, B., Min, J.K., Little, S.H., 2017. Cardiac 3D Printing and its Future Directions. *JACC: Cardiovascular Imaging* 10, 171–184. <https://doi.org/10.1016/j.jcmg.2016.12.001>
- Wasilewski, J., Niedziela, J., Osadnik, T., Duszańska, A., Sraga, W., Desperak, P., Myga-Porosiło, J., Jackowska, Z., Nowakowski, A., Głowacki, J., 2015. Predominant location of coronary artery atherosclerosis in the left anterior descending artery. The impact of septal perforators and the myocardial bridging effect. *Kardiochir Torakochirurgia Pol* 12, 379–385. <https://doi.org/10.5114/kitp.2015.56795>



UNIVERSITAS  
GADJAH MADA

**TEACHER'S PERSPECTIVE ON EFFECTIVENESS OF 3-DIMENSIONAL PRINTED CORONARY  
ARTERY AS AN EDUCATIONAL  
MEDIA FOR UNDERGRADUATE MEDICAL STUDENTS IN FACULTY OF MEDICINE, PUBLIC HEALTH,  
AND NURSING**

**UNIVERSITAS GADJAH MADA**

M. ALFIAN KEMAL W, dr. Dyah Samti Mayasari, Ph.D, Sp.JP; dr. Hikmawati Nurokhmanti, M.HPE; Dr.Med.dr. Putri

Universitas Gadjah Mada, 2022 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Ye, Z., Dun, A., Jiang, H., Nie, C., Zhao, S., Wang, T., Zhai, J., 2020. The role of 3D printed models in the teaching of human anatomy: a systematic review and meta-analysis. *BMC Med Educ* 20, 335. <https://doi.org/10.1186/s12909-020-02242-x>