

Meeting the Demands of the Growing IVF Industry: Development of a Hybrid Education and Training Program to Address the Workforce Shortage



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Objective

The main aim of this study was to create a hybrid education program that blends conventional hands-on instruction in Assisted Reproductive Technologies (ART) with digital techniques that enable learners to: document procedural steps in a digital laboratory notebook, assess competencies, self-direct learning, evaluate knowledge, and create a digital and portable "knowledge passport" for verification of skills and knowledge. The secondary objectives included evaluating the viability of implementing the program and obtaining feedback from participants to identify strengths or limitations.

STUDY DESIGN

A mixed-methods approach was employed in this study, incorporating a literature review, expert consultation, and pilot testing. The program was collaboratively developed by subject matter experts (ARTC Scientific Advisory Board), instructional designers (EmbryoDirector IVF Academy), and digital technology specialists. The program's learning objectives and content were derived from the literature review, while the hands-on methodologies were overseen by subject matter experts using the standard EmbryoDirector IVF Academy curriculum. Instructional design principles were then used to align the digital technology with the ART learning objectives and to provide engaging digital learning activities to complement the hands-on activities. The hands-on activities were designed to prioritize experiential learning, while the digital learning activities featured interactive and self-directed multimedia elements, such as instructional videos, simulated clinical decision making, and quizzes. Pilot testing was conducted with a small group of EmbryoDirector IVF Academy students to assess the feasibility and effectiveness of the program, with surveys and observations used to collect data.

RESULTS

Participants in the experimental group were asked to demonstrate theoretical knowledge through self-directed completion of qualitative assessments. This was not mandatory for progression in the hands-on training portion. Participants in the self-directed learning group provided the following feedback: increased engagement (95%), enhanced learning experience (95%), feeling better prepared to join the workforce (90%), personalized and learner-centered approach (90%) on the hybrid education program.

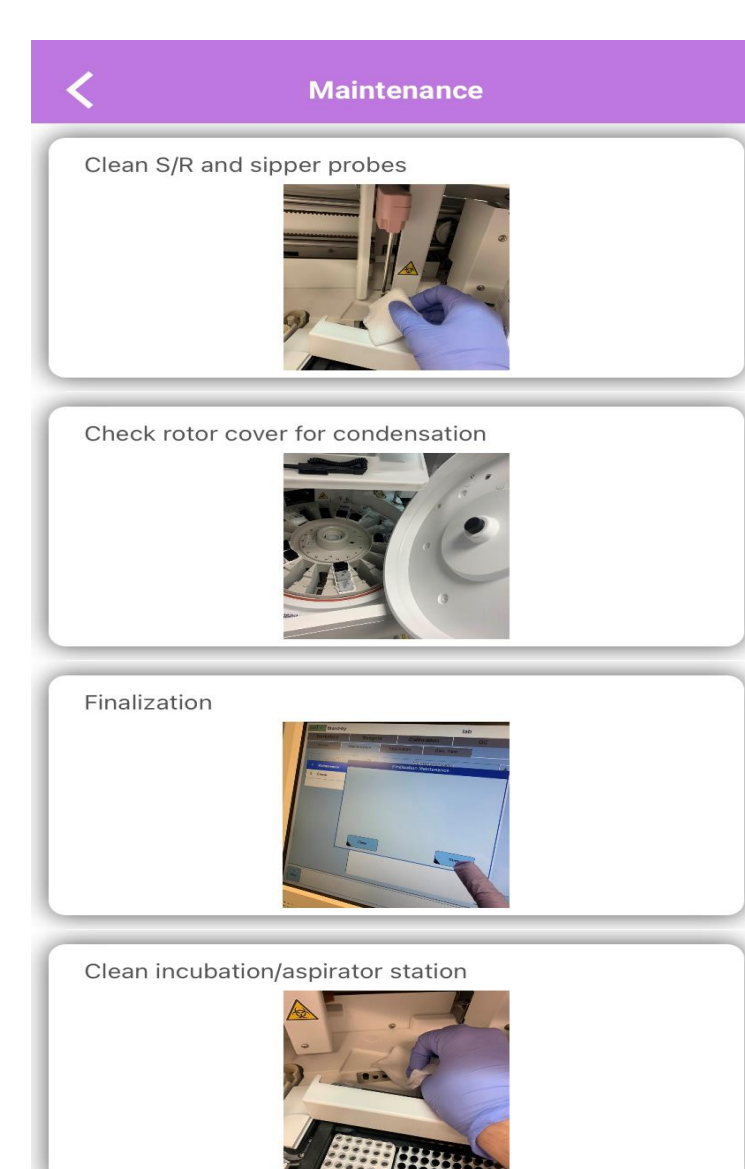
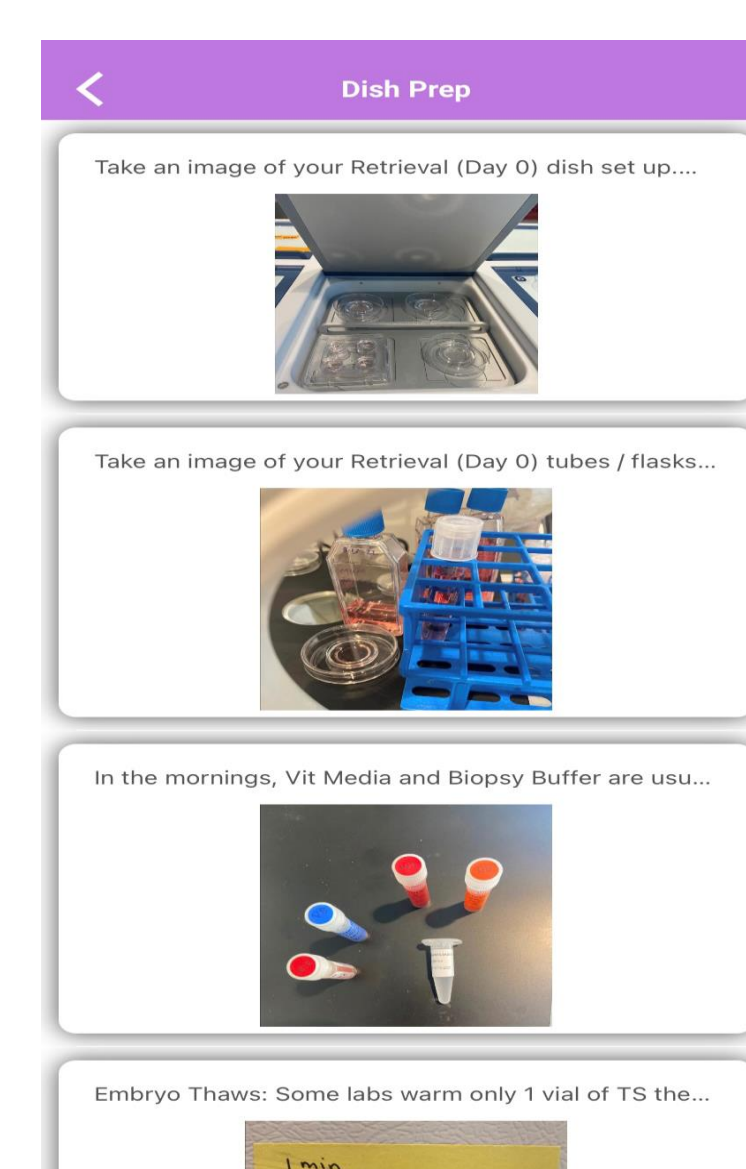
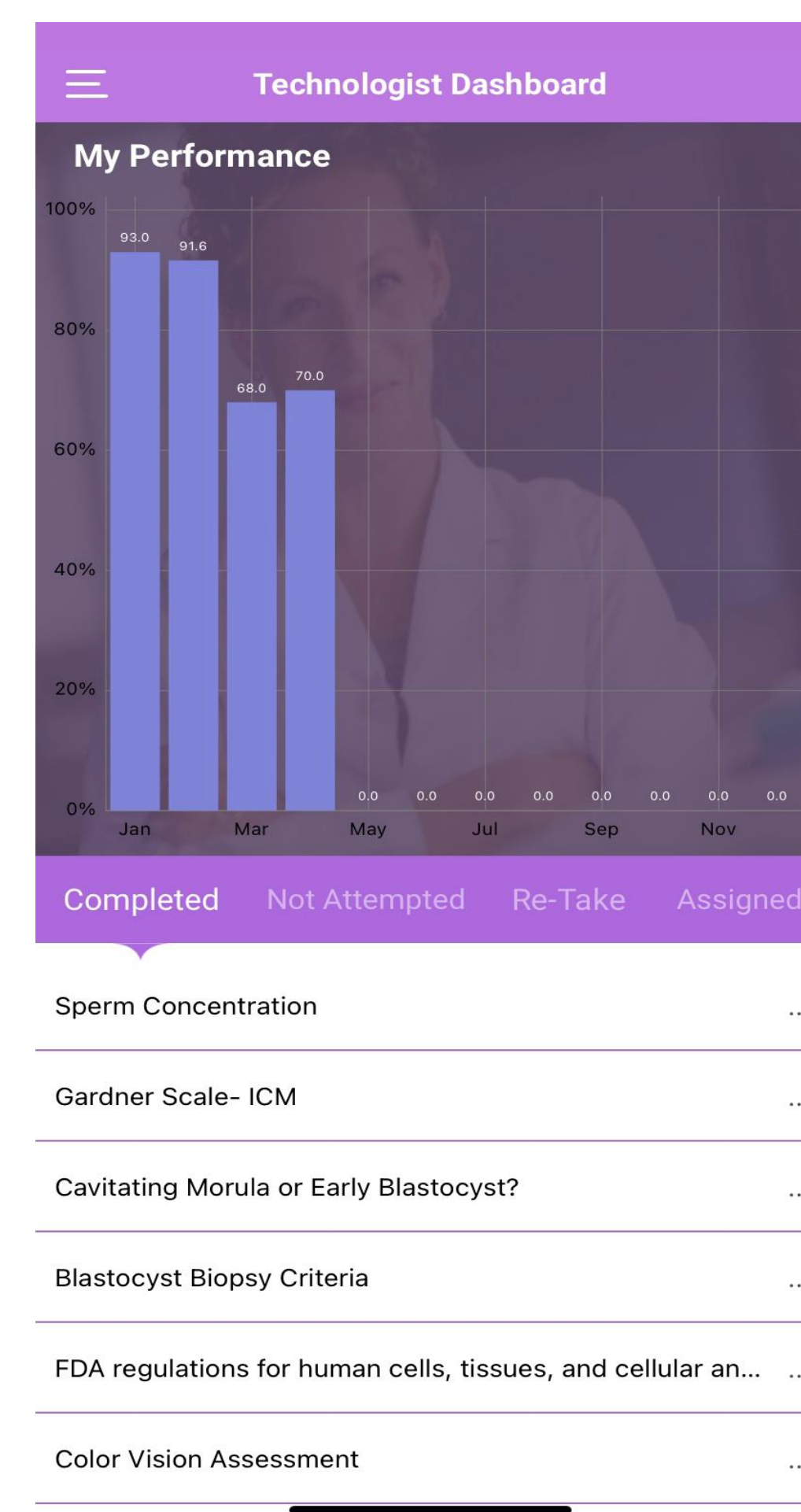
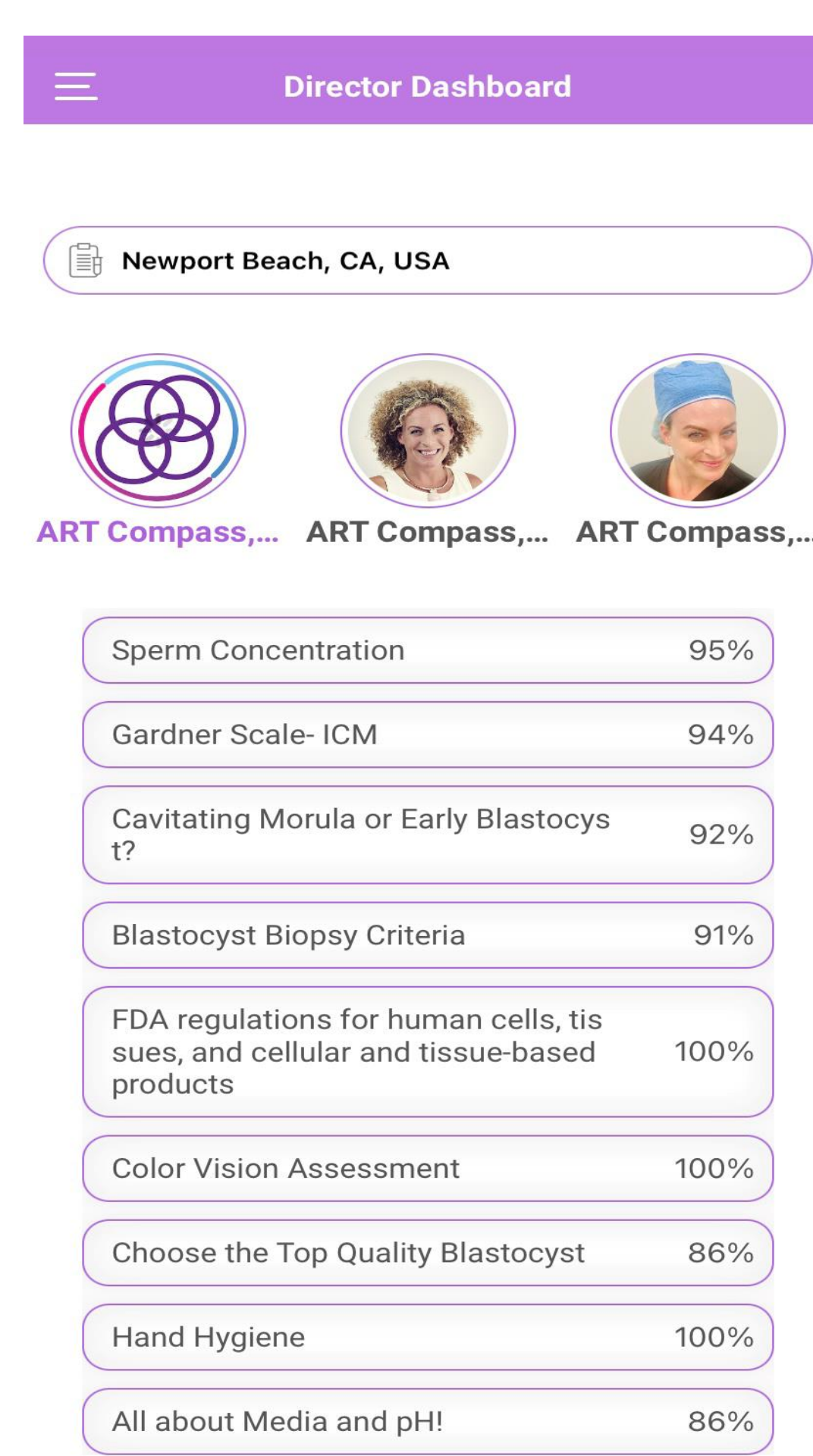
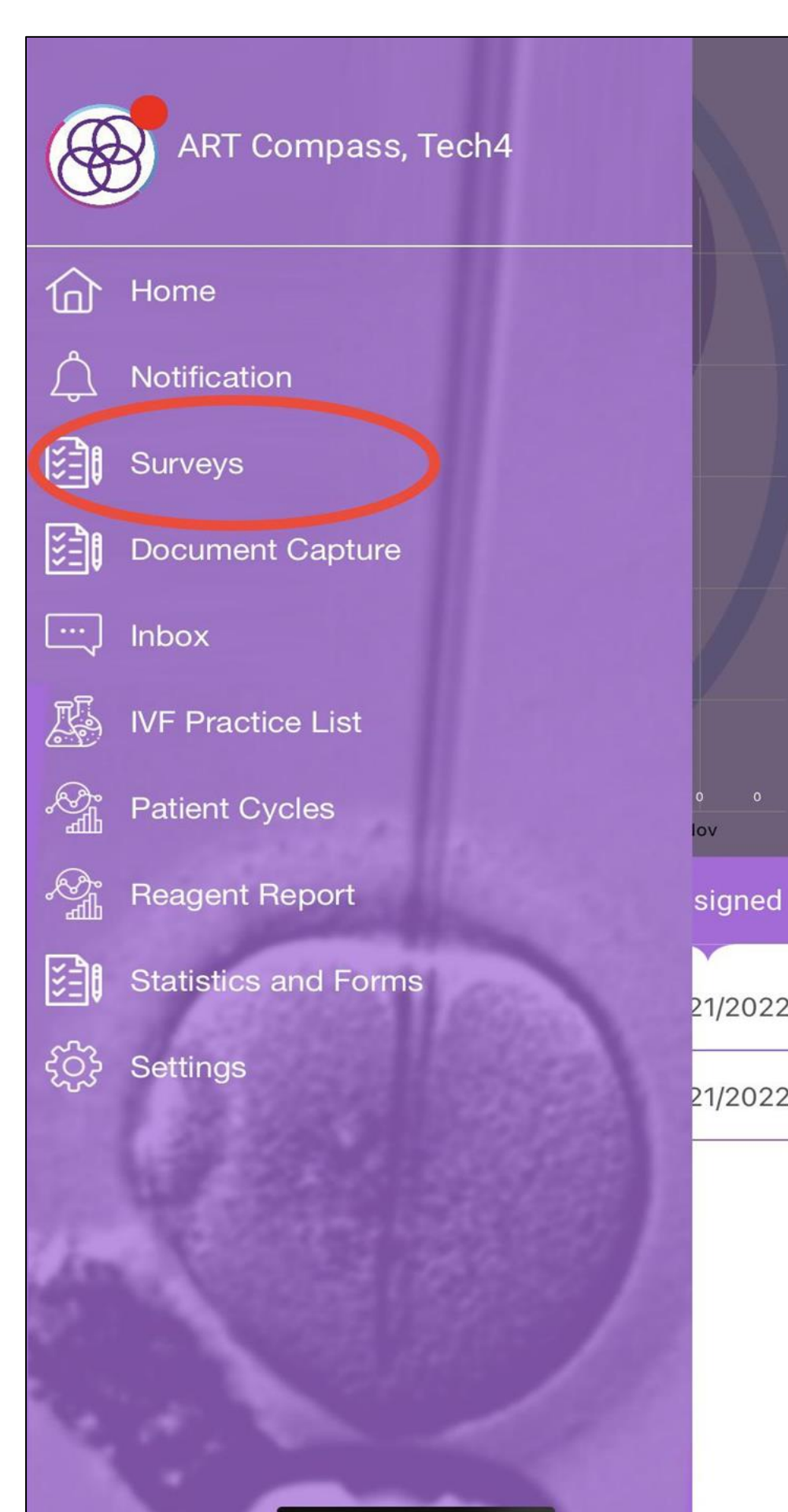
LIMITATIONS

Small sample size, mainly USA based participants, self reported data.

WIDER IMPLICATIONS

The development of a hybrid embryology education program and "knowledge passport" combining hands-on and digital methodologies is an important step towards addressing the challenges posed by the ART professionals workforce shortage. The findings of this study will inform the development of future embryologist educational programs and contribute to the ongoing conversation on the role of digital learning in ART education and training.

Disclosures: Shareholders: DG, DS, CC (AIVF, ARTC) and AA (EmbryoDirector).



One on One Expert Hands-On Training	Paired ART Compass Digital Assessment	Digital Training Checklist and Competency Recording Assessment
Andrology	Male Reproductive System	Yes
	Sperm Function	
	Sperm Cryopreservation	
Embryology	All About Media and pH	Yes
	Live Cell Imaging and Microscopy	
	QC/ QA In the Embryology Lab	
Vitrification	Basic Cryobiology of Embryos	Yes
	Cryopreservation	
	Liquid Nitrogen Handling	
ICSI	Gamete Collection	Yes
	Gamete Biology, Fertilization, and Early Embryo Development	
	InVoCell IVC Devices	
Biopsy	Genetics of Reproduction: Preimplantation	Yes
Lab General	FDA Regulations	Yes
	Personal Protective Equipment	
	Blood Borne Pathogens	
	Hand Hygiene	
Clinical Decisions	Freeze or Discard?	Yes
	Choose Top Blastocyst	
	Oocyte Grading	
	SART Cell Symmetry	
	SART Blastocyst Expansion	