Knowledge, Perceptions, & Uses of Resistance Training Technologies: A Preliminary Descriptive Analysis
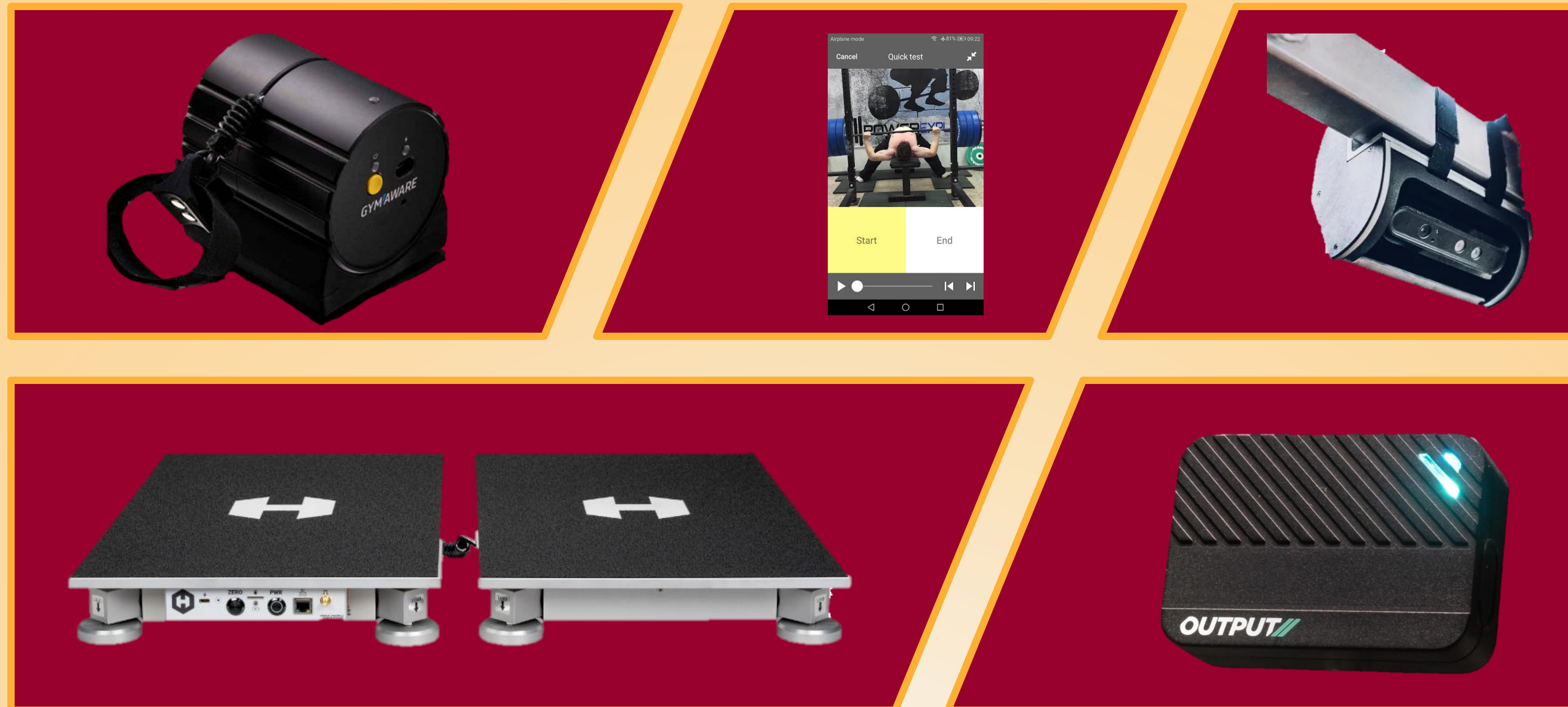
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INTRODUCTION

- Velocity-based training (VBT) devices measure the velocity of the barbell during resistance exercises.
- VBT can be used to complete force-velocity profiling, provide augmented feedback, conduct autoregulatory training, and monitor performance and fatigue.
- Many different technologies are being utilized in the strength and conditioning community in a variety of ways.
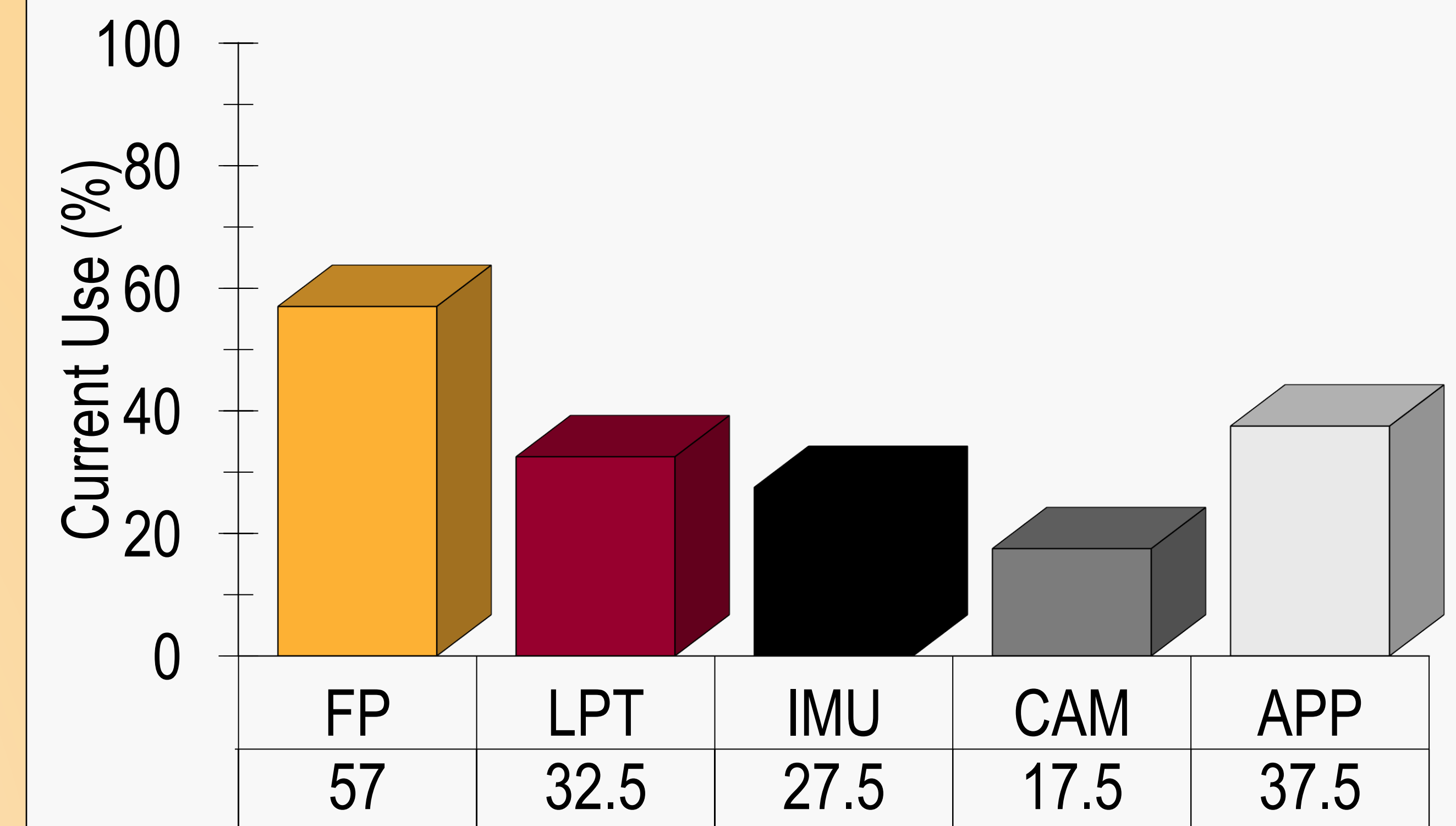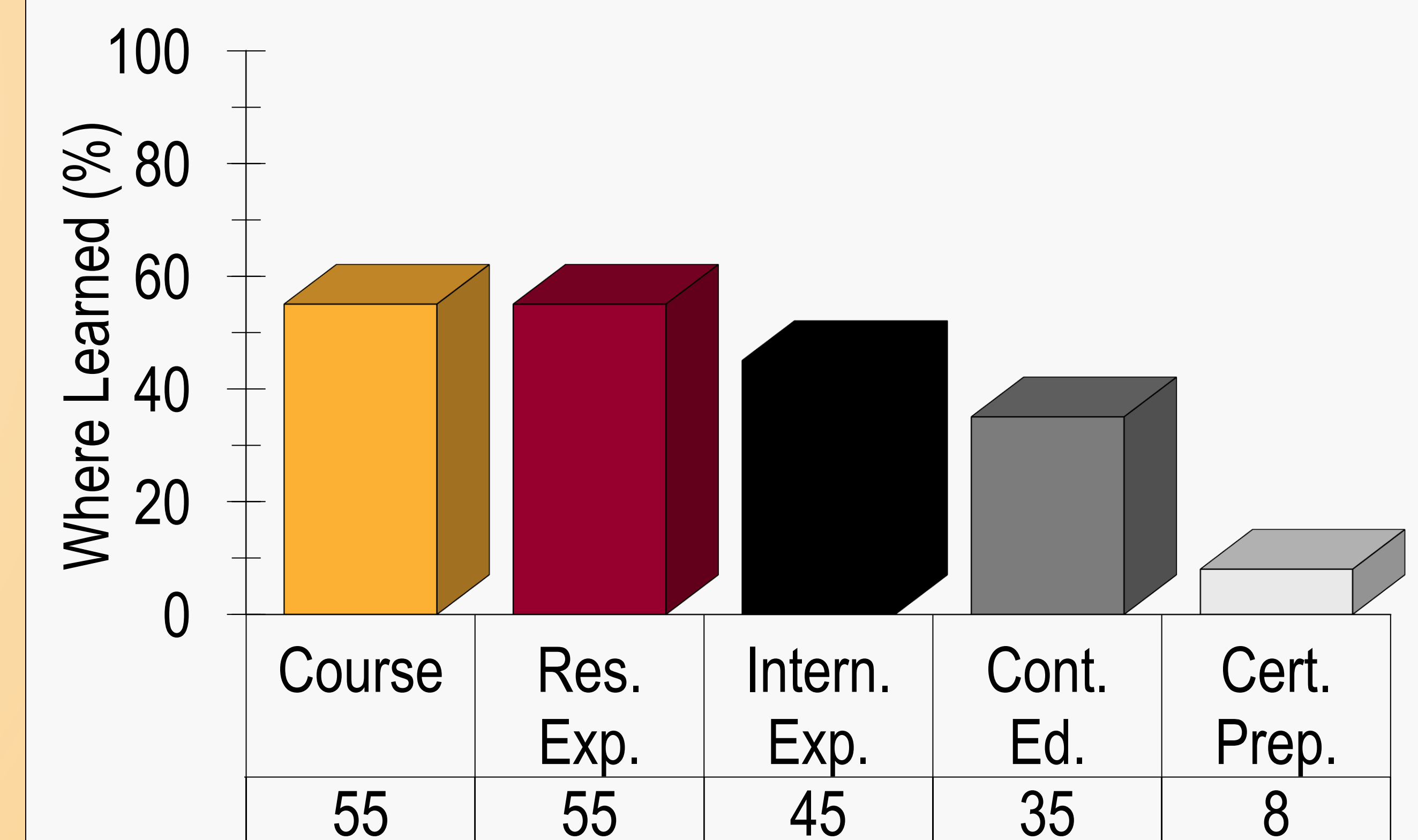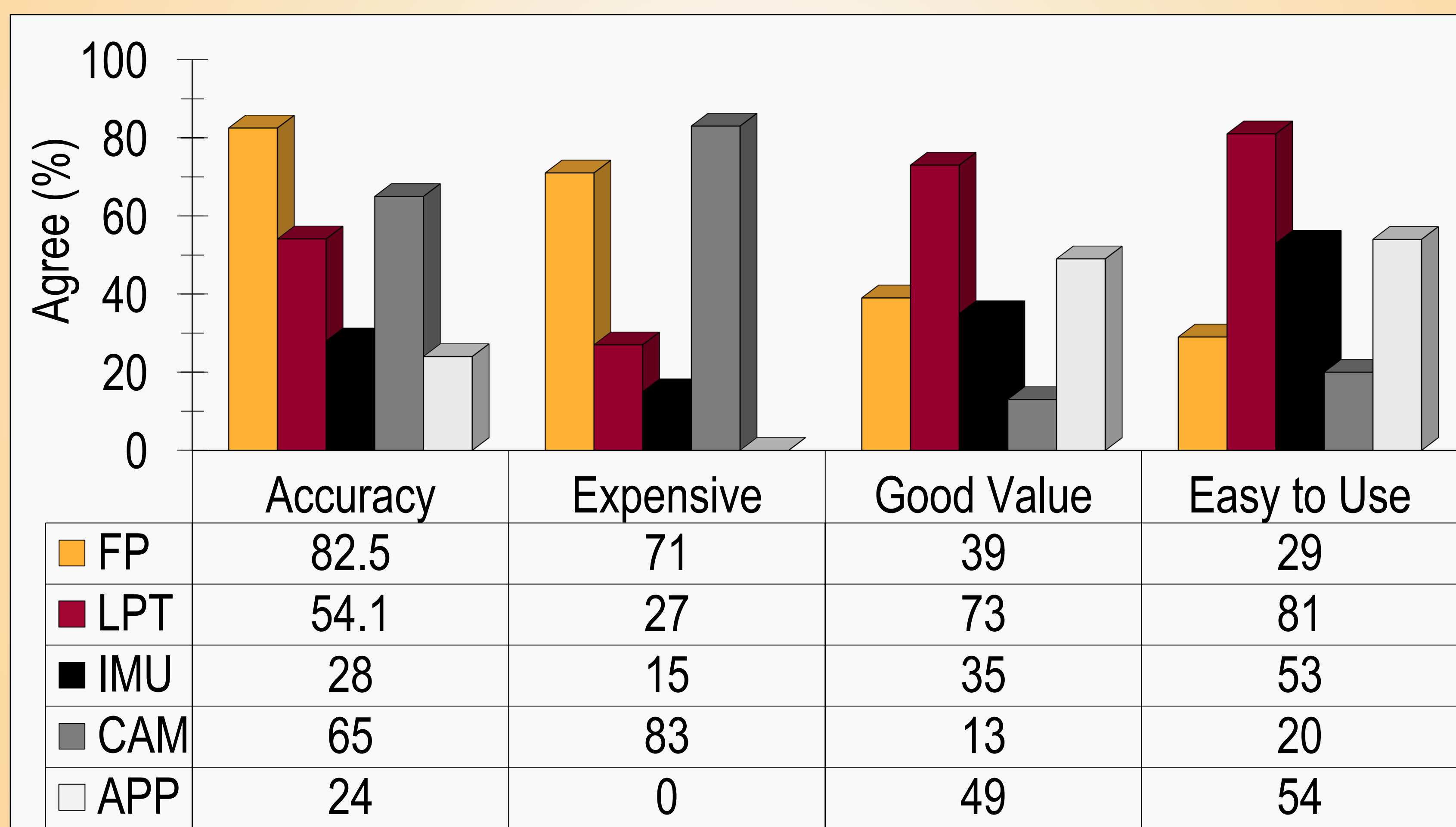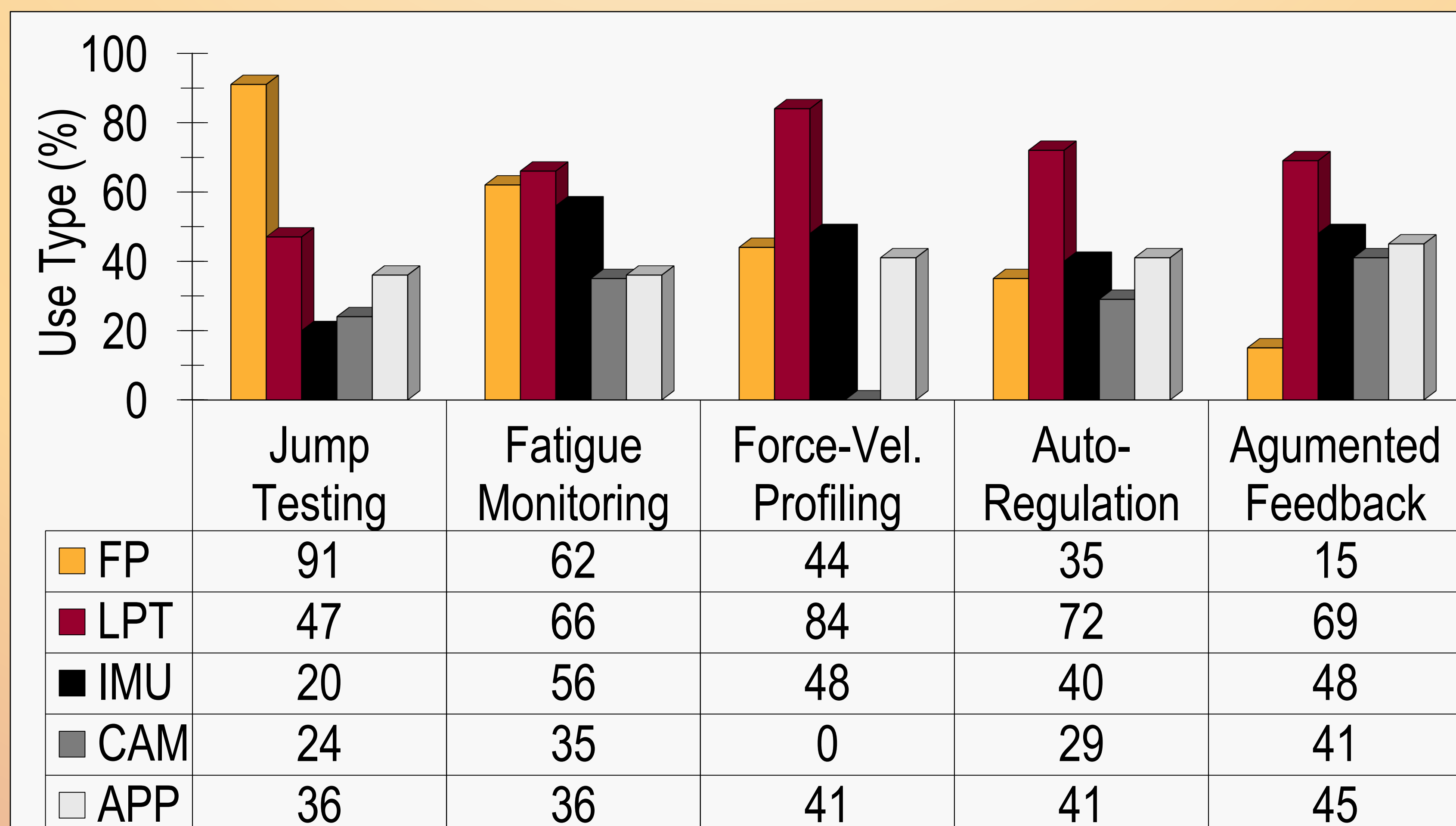
PURPOSE

- Investigate the knowledge, use, and opinions of force plates (FP), linear position transducers (LPT), inertial measurement units (IMU), 3D motion capture cameras (CAM), and smartphone applications (APP) amongst strength and conditioning practitioners.
- Evaluate how these technologies are being utilized in the field of sport science in various populations.

METHODS

- Forty strength and conditioning professionals completed an online survey.
- Demographic information included age, gender, education, and employment.
- Subjects were asked to rate familiarity with each technology and their opinion on different characteristics for each technology.
- Current users of each technology were asked how they use each in practice.

Agree (%)

	Accuracy	Expensive	Good Value	Easy to Use
FP	82.5	71	39	29
LPT	54.1	27	73	81
IMU	28	15	35	53
CAM	65	83	13	20
APP	24	0	49	54

Use Type (%)

	Jump Testing	Fatigue Monitoring	Force-Vel. Profiling	Auto-Regulation	Agumented Feedback
FP	91	62	44	35	15
LPT	47	66	84	72	69
IMU	20	56	48	40	48
CAM	24	35	0	29	41
APP	36	36	41	41	45

RESULTS

Current Use (%)

	FP	LPT	IMU	CAM	APP
	57	32.5	27.5	17.5	37.5

Where Learned (%)

	Course	Res. Exp.	Intern. Exp.	Cont. Ed.	Cert. Prep.
	55	55	45	35	8

PRACTICAL APPLICATIONS

- Provide insight into how strength and conditioning practitioners perceive and use resistance training technologies, which may assist other professionals.
- More data is needed to allow for comparisons between different types of settings and populations.

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