

Motivation, Player Types

CMSC 19929: Creating Computer Games for Learning

Guest Lecturer: Erica Goodwin

Today's Topics

- Motivational theories and their applications in educational games
- Different types of players and ways to motivate them

Model of motivation in games

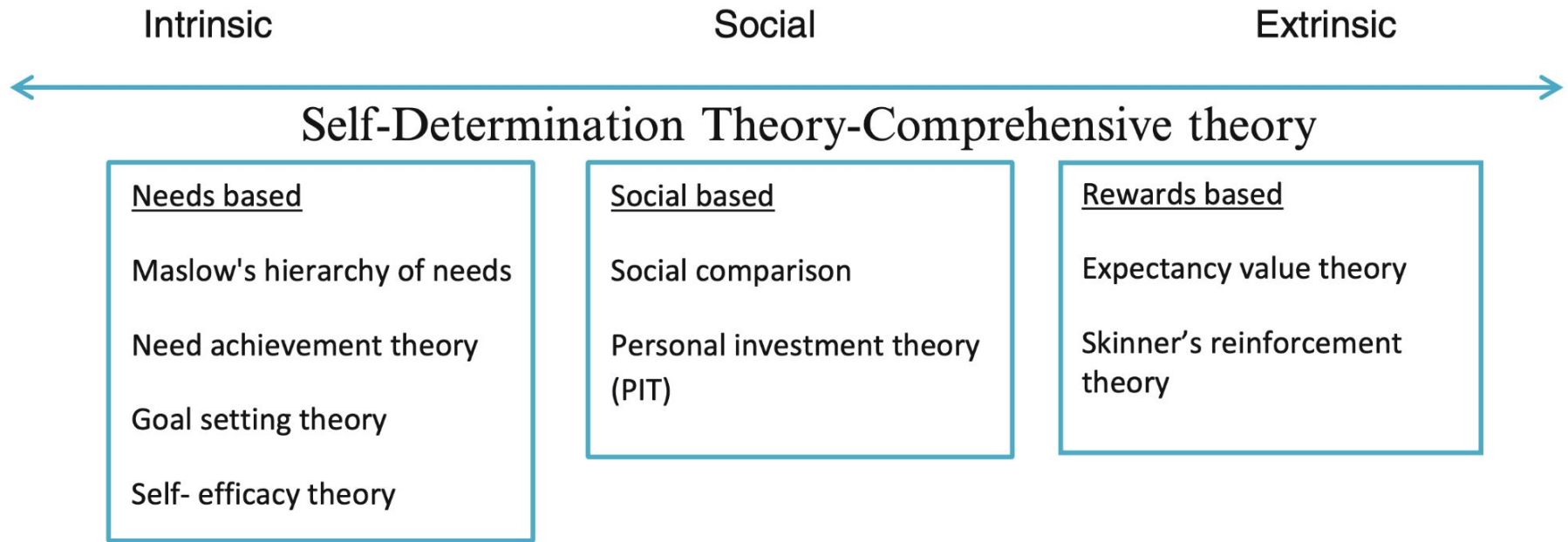


Fig. 2.2 Model of motivation in games (based on Ryan & Deci, [2000b](#) and Vassileva, [2012](#))

Model of motivation in games

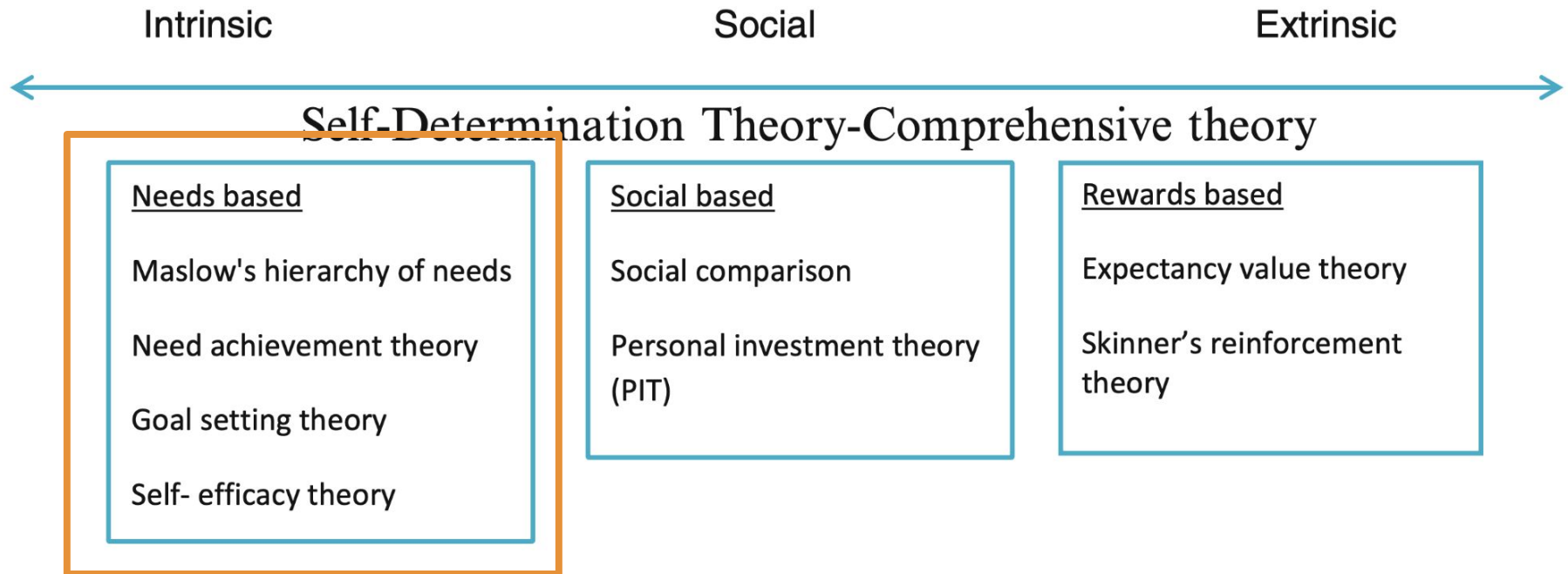


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Needs-based: Maslow's hierarchy of needs



Maslow's hierarchy of needs

- Theory of human motivation that proposes 5 levels of needs that drive human activities
- **Argument:** Human behaviors are driven by the desire to satisfy physical and psychological needs.

Discussion



Maslow's hierarchy of needs

- In educational contexts, what outside life circumstances could negatively affect learning?
- What factors could contribute to positive learning?

Needs-based: Maslow's hierarchy of needs

In educational contexts, what outside life circumstances could negatively affect learning?

- not having consistent access to food, water, shelter
- lacking lower level on hierarchy will make it hard to focus and learn
- bad relationships with family or classmates
- lacking confidence
- mental illness, health
- social security and safety

Needs-based: Maslow's hierarchy of needs

In educational contexts, what outside life circumstances could negatively affect learning?

- Fearing for safety takes up mental energy at school
- Insecure about intelligence - less willing to ask questions
- Lack of sleep, illness, less energy, distracting
- Not feeling loved -> distracted, thinking about your loneliness / sadness
- Lack of belonging makes it harder to connect to students in classroom and collaborative learning
- Hunger - some children just can't think straight
- No clean clothes - embarrassment and not paying attention or truancy
- Less access to schools, less well-funded schools, fewer resources

Needs-based: Maslow's hierarchy of needs

What factors could contribute to positive learning?

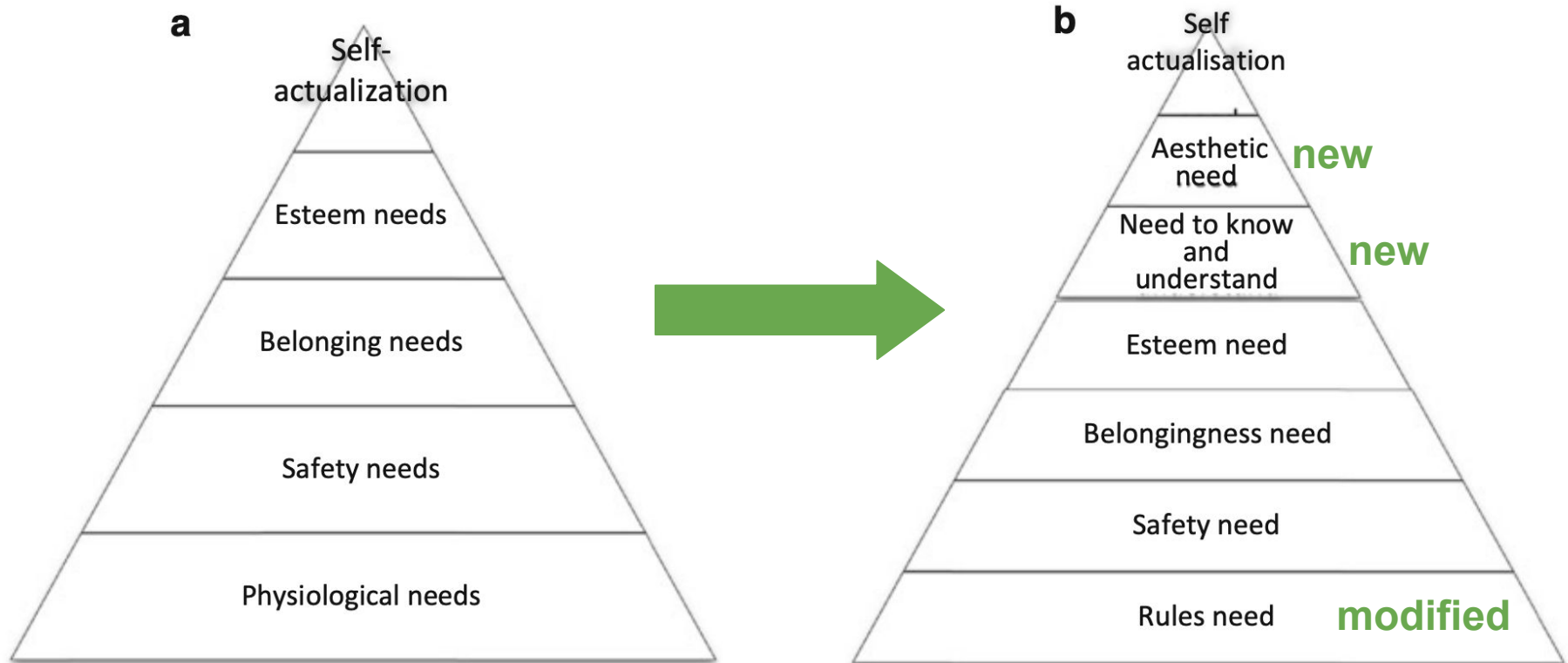
- support from teachers
- rewards for learning tasks
- financial stability
- having food, shelter, etc
- having mindset of wanting to learn
- positive mental and physical health
- good relationship with family and classmates
- clear goal + motivation

Needs-based: Maslow's hierarchy of needs

What factors could contribute to positive learning?

- Strong friendships
- Strong self confidence
- Recreational activities can help skills and psychology
- Having advice on how to excel
- Connecting with teachers or mentors

Modifying Maslow's hierarchy of needs for games



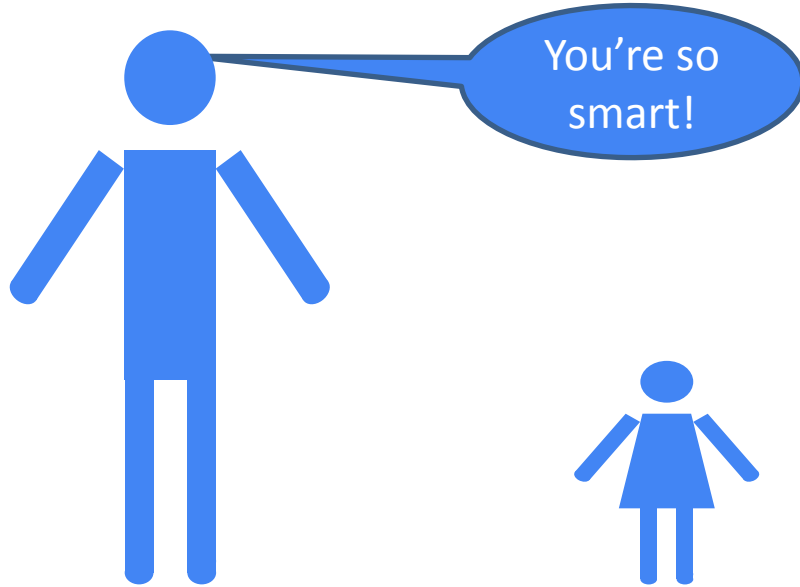
Needs-based: Need achievement theory

Definition: In achievement situations, people **desire success** to the extent that it indicates high ability and seek to **avoid failure** which may be a signal of low ability.

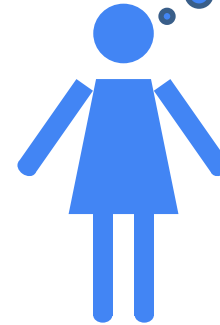
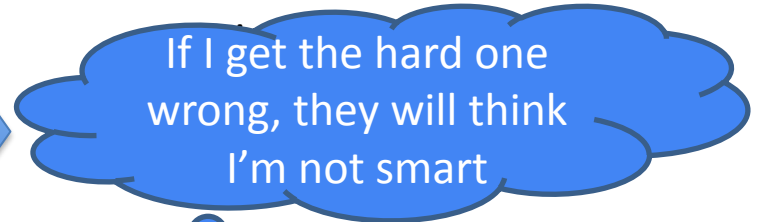
Achieve successes and **avoid failure** are two *separate* motives, affecting the level of task difficulty people choose to undertake.

- High motivation to succeed → intermediate difficulty
- High motivation to avoid failure → easy difficulty

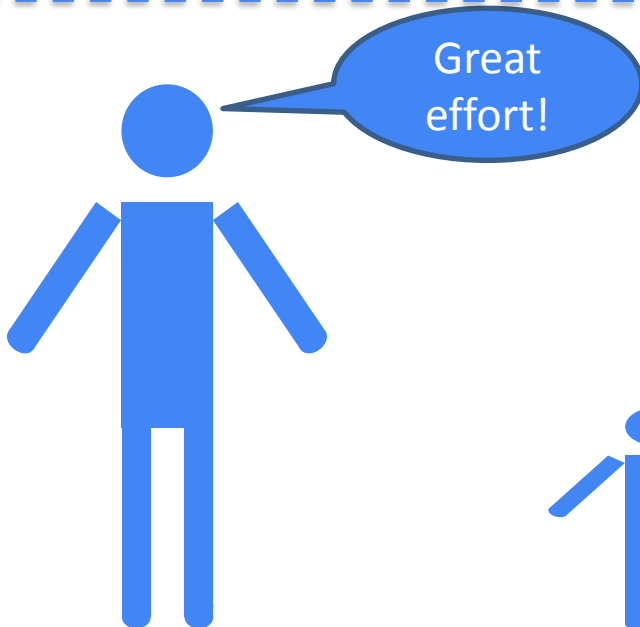
Parents of 1-3 year olds



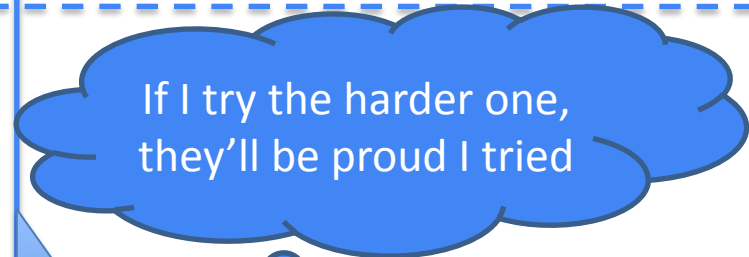
5 years
later....



Great
effort!



If I try the harder one,
they'll be proud I tried



Growth Mindset



Needs-based: Need achievement theory

What are some ways a game can regulate the probability of success and failure according to the player's skill?

- not punishing failure as severely
- immediate feedback and rewards
- different ranks for appropriate level-setting
- difficulty settings
- having a clear goal and progress bar
- time limits (giving enough time)
- practice sessions
- dynamically adjusting difficulty
- different ways of succeeding
- encourage risk-taking
- reward taking challenges (with multiple options)
 - reduce punishment failures

Needs-based: Need achievement theory

What are some ways a game can regulate the probability of success and failure according to the player's skill?

- Offer tutorials
- Allow adjustments of task difficulty
- Offering mini challenges throughout the games to allow more (frequent) successes → **goal settings theory**

Needs-based: Goals Setting Theory

Difficult, specific, context-appropriate, and **immediate goals** motivate people to achieve more than rather than **long-term goals**.

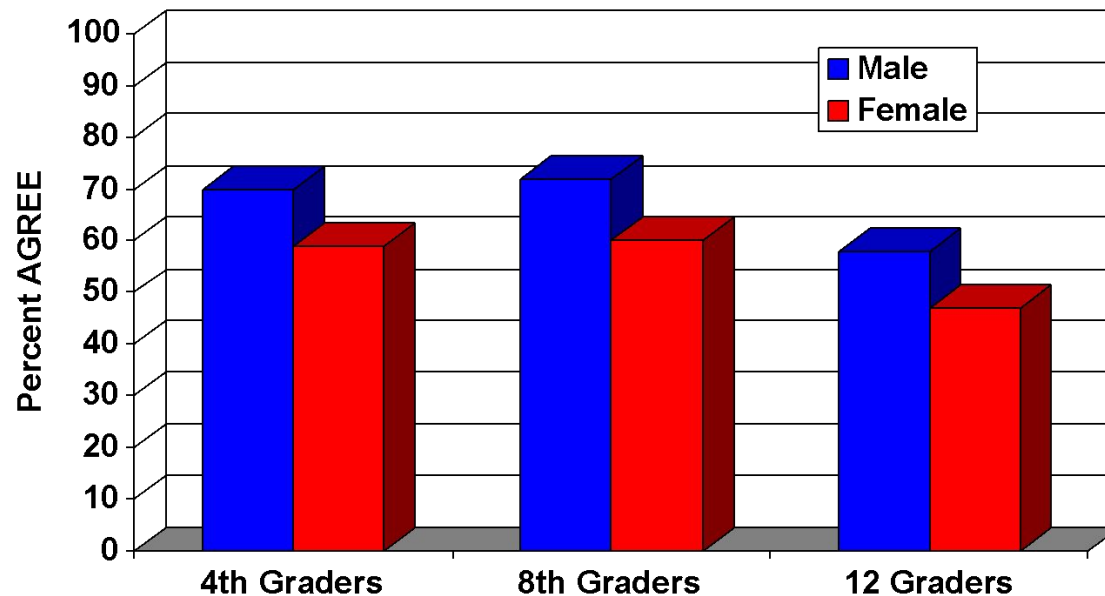
Important attributes:

- Goals need to be specific and sufficiently challenging
- Feedback is provided to show progress in relation to the goal
- Rewards are given for goal attainment

Needs-based: Self-efficacy

Definition: Perceived performance ability for a specific activity

Confidence Gap
Girls less likely to agree with “I am good at math”



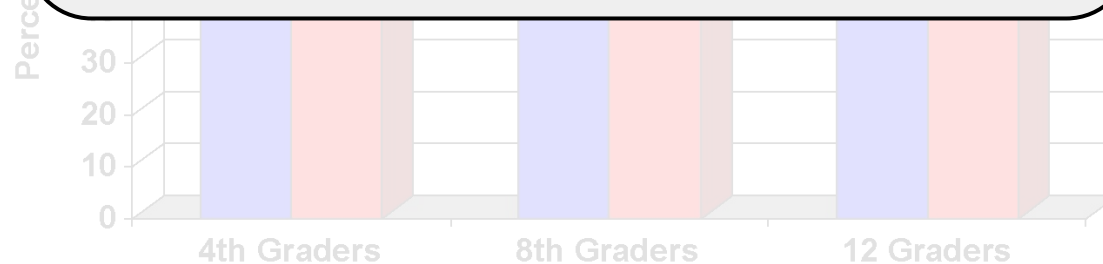
Needs-based: Self-efficacy

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Video game self-efficacy is the confidence in the ability to successfully play a video game.



Model of motivation in games

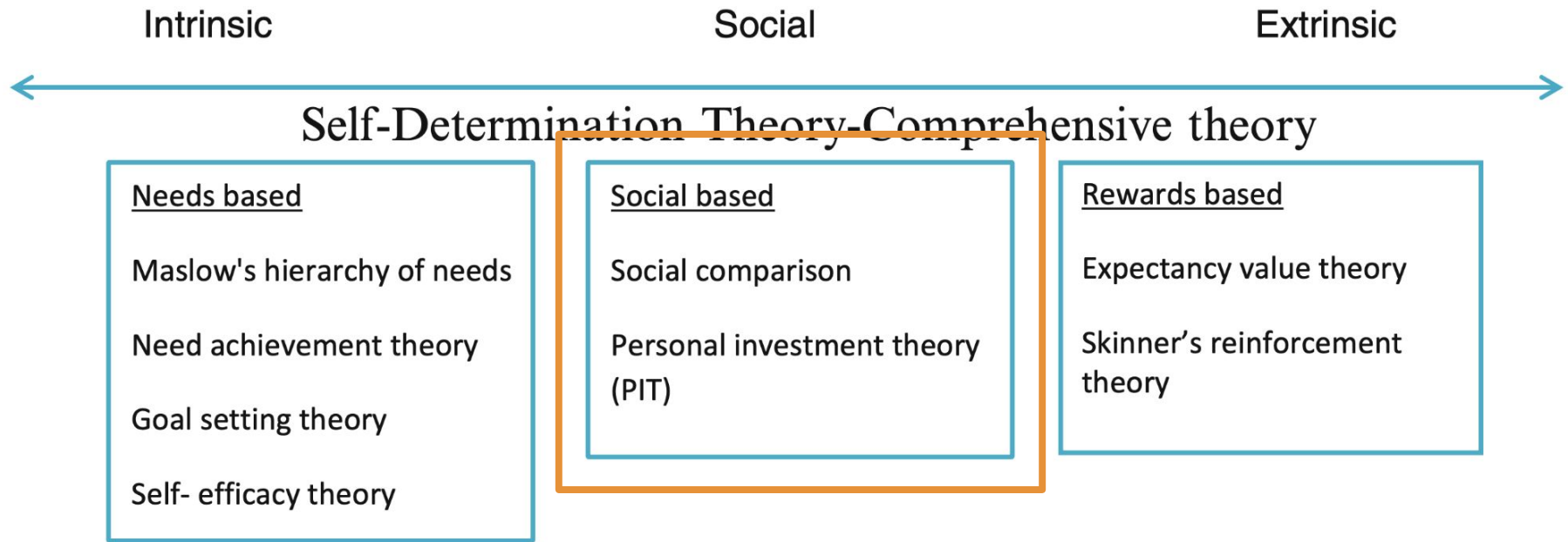


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Social-based: Social Comparison Theory

- An important source of knowledge about oneself is comparisons with other people.
- We evaluate our beliefs, abilities, and reactions by comparing them with those of others
- Competitive persons have greater interest in social comparisons than less competitive individuals.

Social-based: Social Comparison Theory

To simulate an environment for social comparisons, games often give players feedback in the context of others' performance.

What are some features that enable social comparisons?

- elo rating system
- leaderboards
- show off achievements within game world
- comparison ghost, see how other players did something
- social media for games with no leaderboards
- titles that players can earn
- feedback on % of players that have a certain achievement

Social-based: Social Comparison Theory

To simulate an environment for social comparisons, games often give players feedback in the context of others' performance.

What are some features that enable social comparisons?

- Players earn points and are ranked based on the total number of points they have (ranking system)
- Comparing total points to other players within a certain area or age range (leaderboard)
- Competition can be introduced as the challenge to master given tasks

Social-based: Personal Investment Theory

- Meaning a person creates in the form of beliefs, perceptions, feelings, purposes, and goals motivates behavior.

Personal incentives:

- Task incentives (reflect skill improvement and mastery)
- Ego incentives (reflect a wish to perform better in comparison with others)
- Social incentives (reflect social recognition and approval from significant others)

Incentives in games can come in the form of points, badges leveling and user reputations.

Model of motivation in games

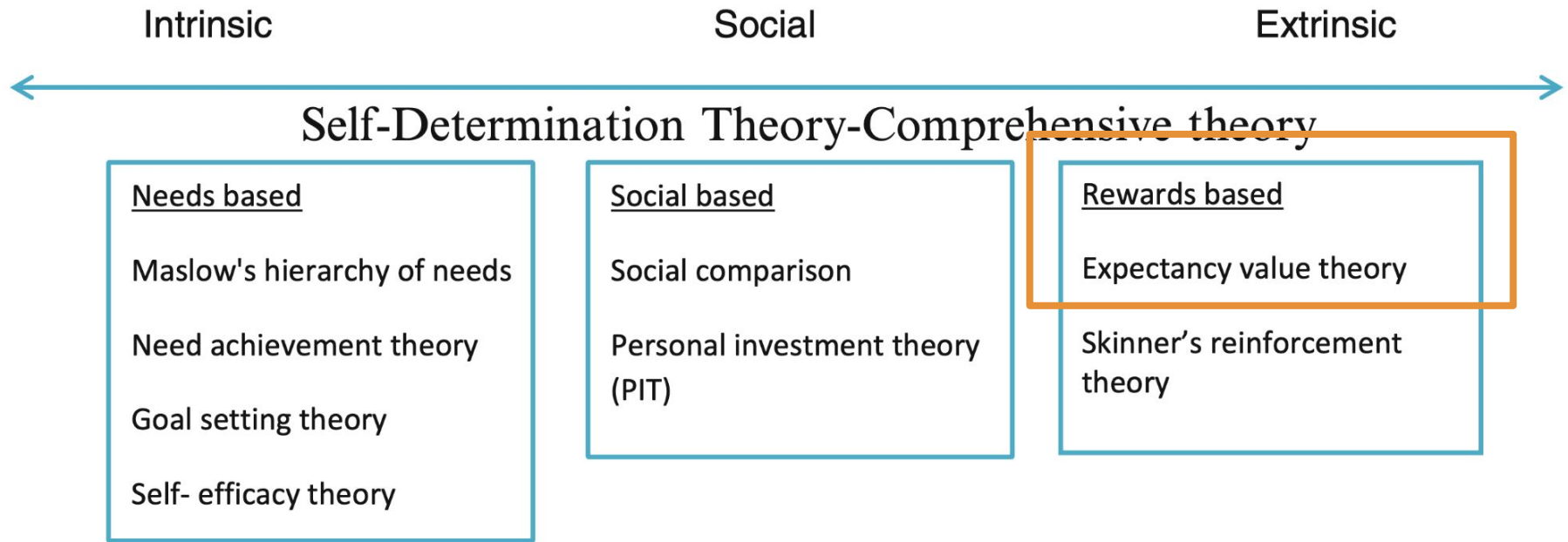


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Reward-based: Expectancy Value Theory (EVT)

Definition: Goal-directed behavior is a function of the belief that efforts will lead to performance needed to attain the rewards; performance will determine the outcome; and the value attached to achieving the outcome.

Expectancy: if I put in effort, will I succeed?

Value: how much do I value succeeding?

Theoretical base of incentives and rewards

Motivation theory	Incentives/rewards	Role
Self efficacy	Audio/verbal/visual/music/sounds effect	Feedback
	Progress bar	Feedback, achievements
Self-efficacy, goal-setting, PIT, expectancy value, need achievement	Points/bonus/divident	Feedback, reward, status, achievements, competition, progression, ownership
	Mini games/challenges/quests	Reward, status, competition, achievements
Self-efficacy, goal-setting, PIT, expectancy value, social comparison	Badges	Status and reputation, achievements and past accomplishments, collection, competition, ownership
	Virtual goods	Reward, social, status, achievements, ownership, self-expression
	Leaderboard	Status and reputation, achievements, competition
	Rewards-choosing colors, power	Achievements

Theoretical base of incentives and rewards

Self-efficacy, goal-setting, PIT, expectancy value, need achievement, social comparison	Achievements	Collection, status, competition, discovering, progression
	Levels	Feedback, status and reputation, achievements, competition, moderate challenge
Social comparison, personal investment theory, expectancy value	Avatar	Social, self-expression, ownership

Different player types

In small group, share your favorite games and describe what motivates you when playing those games? (playing to be on top of the leaderboard, hanging out with friends, achieving high scores, etc.)

Player Types #1

Competitor: Plays to best other players, regardless of the game

Explorer: Curious about the world, loves to go adventuring; seeks outside boundaries - physical or mental

Collector: Acquires items, trophies, or knowledge; likes to create sets, organize history, etc.

Achiever: Plays for varying levels of achievement; ladders and levels incentivize the achiever

Joker: Doesn't take the game seriously - plays for the fun of playing; potential to annoy serious players but can also make the game more social than competitive

Artist: Driven by creativity, creation, design

Director: Loves to be in charge, direct the play

Storyteller: Loves to create or live in worlds of fantasy and imagination.

Performer: Loves to put on a show for others

Craftsman: Wants to build, craft, engineer, or puzzle things out

Player Types #2 (Bartle's Taxonomy)



Killers

Defined by:
A focus on winning, rank, and direct peer-to-peer competition.

Engaged by:
Leaderboards, Ranks



Achievers

Defined by:
A focus on attaining status and achieving preset goals quickly and/or completely.

Engaged by:
Achievements



Socialites

Defined by:
A focus on socializing and a drive to develop a network of friends and contacts.

Engaged by:
Newsfeeds, Friends Lists, Chat



Explorers

Defined by:
A focus on exploring and a drive to discover the unknown.

Engaged by:
Obfuscated Achievements

Different player types

In your project group, brainstorm features to support different player types in your game

Player Types Handout pdf is on the website (expand today's lecture title "Motivation, Player Types" to see)

If you work solo, group with someone who also works solo!