

# Emerging Trends in Game Development

Serious Games, Simulations, Casual and Mobile Games,  
and Virtual Worlds



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## Key Findings, 2008

The workforce needs of employers in the emerging non-entertainment game industry in California were the target of this primary research study. The findings support the creation, adaptation or expansion of game development programs at California Community Colleges to meet the increasing industry demand and provide employment opportunities for students.

Download the complete report online at [www.coecc.net](http://www.coecc.net).

In collaboration with:

*Multimedia &  
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## Research Objectives

- Identify game firms in the major emerging areas (serious, casual and mobile, simulations, and virtual environments), their geographical concentration, and size of firms.
- Project employment growth for the identified occupations.
- Validate employer challenges to recruit, hire and retain their workforce.
- Identify occupations in emerging areas that are most relevant to community colleges.

## Emerging Areas in Game Development

In addition to games for the general public, game firms in emerging areas develop games for a wide range of industry employers, including healthcare; military and defense; advertising and marketing; education; and employee training firms.

The products being developed by game firms in emerging areas for these customer groups are just as varied.

- Over half are developing casual games (52%), with an additional 21% considering developing casual games.
- More than one-quarter (29%) currently work on mobile games with an equal amount (27%) considering mobile games as future projects.
- Close to 46% are currently developing or considering developing serious games.
- More than 40% of employers are currently developing or considering developing virtual environments.

## Industry Employment and Growth

The study identified approximately 415 firms working in emerging areas of game development in California.

- The majority of firms (65%) are small – under 25 employees, with a significant portion (28%) employing 5 or fewer employees.
- Almost half of employers (47%) hire some of their employees on a temporary or contract basis.
- More than 16% of employers surveyed hired most or almost all of their staff on a temporary or contract basis.

Currently, game firms in emerging sectors employ approximately 9,600 workers.

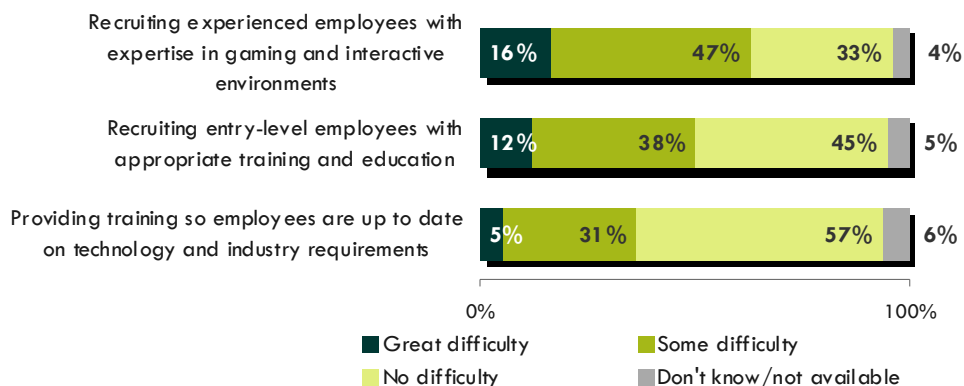
- These game firms are projected to increase employment by as much as 19% or 1,800 jobs during the next 12 months.
- 55% of surveyed employers plan to hire more employees over the same period.

## Workforce Challenges

Employers are facing significant challenges finding qualified workers.

- Three out of five employers experience difficulty recruiting experienced employees with expertise in gaming and interactive environments.
- 50% of employers surveyed report difficulty recruiting entry-level employees with appropriate training and education.
- More than one-third of employers find it difficult to provide training so employees are kept up-to-date on technology and industry requirements.

### Workforce Challenges for Game Firms



## Occupational Employment

All eight occupations studied show significant growth over the next 12 months.

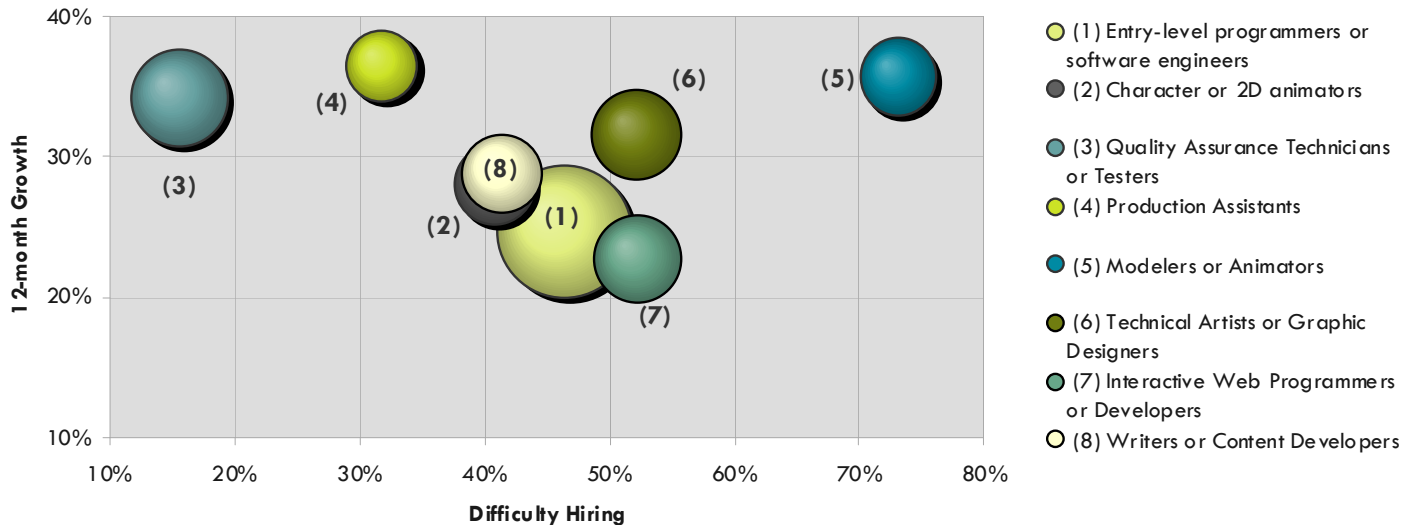
- The largest growth occupation is entry-level programmers or software engineers with 340 new jobs anticipated (an increase of 25%).
- The fastest growth rates are projected for production assistants (37%) and modelers/animators (36%).

Employers indicate difficulty in hiring for all eight occupations. In particular:

- More than 70% of employers find it difficult to staff modelers or animators.
- Half of employers surveyed reported difficulty hiring interactive web programmers/developers and technical artists/graphic designers.

### Difficulty in Hiring and Expected Growth

(The area of each bubble in the chart represents the size of current employment for each occupation.)



## Education, Training, and Skill Requirements

Employers expressed great interest in education and training programs that can be developed by community colleges:

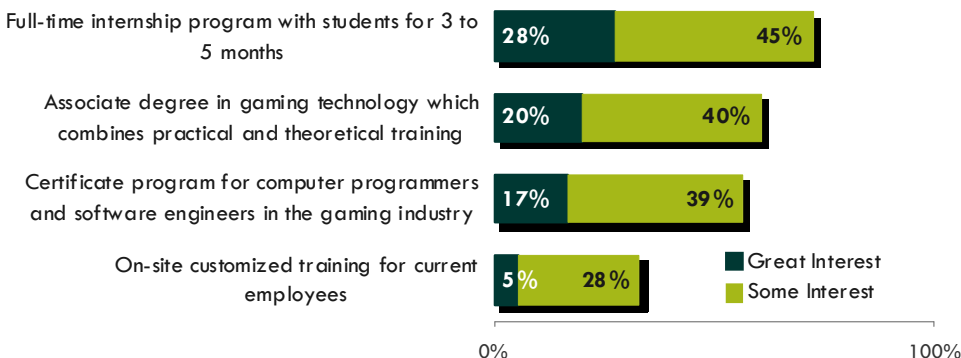
- A full-time internship program with students for 3 to 5 months (73% indicated interest).
- An associate degree in gaming technology that combines practical and theoretical training (60% expressed great or some interest).
- A certificate program for computer programmers and software engineers in the gaming industry (56% indicated interest).

### Employers' Top 5

#### Most Important Knowledge and Skill Areas

1. Knowledge and ability to program in object oriented computer languages
2. Knowledge and understanding of artistic design fundamentals
3. Knowledge and understanding of the game design process (C++)
4. Working knowledge of 3D modeling
5. Working knowledge of electronic gaming and virtual environments

### Employer Interest in Community College Programs



## Distribution of Emerging Game Firms in California



### For More Information

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