Current Situation in the Japanese Game Research and Game Development Pedagogical Practice

Koji Mikami Ph. D (Media and Governance)

School of Media Science
Tokyo University of Technology
Game Education in Japan
There are 764 University
(82 National, 87 Public, 588 Private 7 others)

How many University have faculty named “Game” something?
- Game design, Game development, Game study, Game programing etc

- More than 100?
- 51 – 99?
- 11 – 50?
- Less than 10?
Background of Education in Japan

• There are no “Faculty” includes name of “Game” in 4 year University
  – There are a few game “Section (2)” or “Course (less than 10) as University”
  – Many University uses framework of Informatics or Media Science (ie. TUT and Kanagawa of Institute Technology)
  – Curriculum restriction to new faculty by government
  – Strict requirement for teaching staff of new faculty
    (Ph.D degree, number of Journals)

• Many Universities and Researchers conduct Game Researches

• Most Game Development Education has conducted in Vocational School (almost 40 school) (Diploma or non-Diploma)
TUT Curriculum
TUT Game Education and Research Heat Map

- Game Design, Programing, and Game Production Experience of IGDA Curriculum Frame Work are focused

IGDA Curriculum Frame work
- Critical Game Studies
- Games and Society
- Game Design
- Game Programming
- Visual Design
- Audio Design
- Interactive Storytelling
- Game Production
- Business of Gamin
Utilize Education Framework of School of Media Science

Game and Computer Animation is mainly trained as a project based Workshop
Game Jam Style Education

- Lots of experience from total game production
- Completion (Finishing), Evaluation and Discussion are Important
- No completion (Finishing) = No progress
Journal Regarding Game Education

• Construction trial of a practical education curriculum for game development by industry-university collaboration in Japan
  – https://dl.acm.org/citation.cfm?id=1891110

• Effectiveness of Game Jam-based iterative program for game production in Japan
  – Computers & Graphics Volume 61, December 2016, Pages 1-10

There are link in my web
http://mkmlab.net
Result

- First successful example for 4 year game development curriculum
  - Accepted as Government fund many times
  - Students could create original game and awarded
  - Students could publish journal and awarded
  - The Curriculum and Education Material also awarded by IPSJ (the biggest IT society in Japan)
  - TUT became core venue of “Global Game Jam”
• Games
  – Satoshi Ban, Producer of “Sony Interactive Entertainment”
  – Kenneth Chan, Game Designer of “From Software”
  – Takashi Matsuo, Technical Artist of “Cyber Connect 2”
  – Working most of game publisher and developer

• Animation and Feature Film
  – Yoshitaka Takeuchi, 3D Director of “Your Name.”
  – Toshio Yoshikawa, Production MGR of Studio Ghibli “Princess Kaguya”
Game Design Contest for Younger Generation

“Peracon”

-A concept sheet contest at CEDEC-
Motivation

• Students were able to experience game development
  – Some of the games are awarded and have reasonable quality

• Students could learn advanced technique in Programming, Graphics, Sound and so on
  – We can evaluate their works (Program code, Portfolio or Demo Reel, Music score and so on)

• Game Design sometimes difficult to evaluate without products or prototype
  – Recently game engine help it in some extent…
Game Design Advanced Education

- There are very good publications for Game Design by Eric Zimmerman, Keti Salen, Tracy Fulluton and so on
- Students can learn theory and case study

We require more crazy game designer who has eccentric, cutting edge, quite new idea

There are very unique game designer in Japan (But they have quite deferent thought and busy)

We would like to Utilize tremendous talent in a short time to encourage cutting edge game design education by collaboration with famous professional events
Our Method

• **Peracon (A concept sheet contest) at CEDEC**
  - “Pera” means 1 sheet
  - Competition by 1 page (A4 or Letter size) concept sheet
  - CEDEC is one of the biggest game developers conference in Japan

• Judge by **many** famous Japanese Game Designer and Director
  - To keep Diversity of evaluation

• **Archive all of the “Pera” and Comments from Judge**
  - Students and young game designer can feel the thought of idea of skillful game designers to individual game idea
  - They also can learn “Diversity” (skillful game designers sometimes have opposite idea)
CEDEC

• Game Developers Conference hosted by CESA
  - More than 200 sessions regarding Game Design, Engineering, Visual Arts, Sound, Production, Management, Business, Academic and so on
  - More than 7000 attendee for 3 days conference

• CEDEC 2018  22-24, Aug. 2018 at Yokohama, Japan
  - Keynote by Shigeru Miyamoto (Nintendo)
<table>
<thead>
<tr>
<th>Name</th>
<th>Works</th>
<th>Name</th>
<th>Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masanobu Endoh(Digra)</td>
<td>“XEVIous”, “The Tower of Druaga”</td>
<td>Hiroshi Matsuyama</td>
<td>“.hack//G.U.”</td>
</tr>
<tr>
<td>(Chair of “Peracon”)</td>
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<tr>
<td>Takashi Hiraro</td>
<td>“Star Wars: Racer Arcade”</td>
<td>Tetsuya Mizuguchi</td>
<td>“Rez Infinite”, “Chile of Eden”</td>
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<tr>
<td>Toshiyuki Hoi</td>
<td>“God Eater”</td>
<td>Yuji Naka</td>
<td>“Sonic the Hedgehog”</td>
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<tr>
<td>Yuji Horii</td>
<td>“Dragon Quest”</td>
<td>Yasuhiito Nagaoka</td>
<td>“Gravity Days”</td>
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<tr>
<td>Mizuki Hosoyamada</td>
<td>“Puyo Puyo!! Quest”</td>
<td>Junya Okura</td>
<td>“Gravity Days”</td>
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<tr>
<td>Kazutoshi Iida</td>
<td>“Kyojin no Doshin”</td>
<td>Yosuke Shiokawa</td>
<td>“Fate/Grand Order”</td>
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<tr>
<td>Toru Iwatani(Digra)</td>
<td>“Packman”</td>
<td>Hiroyuki Sonobe</td>
<td>“Best Keiba Derby Stallion”</td>
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<tr>
<td>Kenji Kaido</td>
<td>“ICO”, “Shadow of the Colossus”</td>
<td>Masanobu Suzui</td>
<td>“NES Remix”</td>
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<tr>
<td>Yuichi Kanemori</td>
<td>“KINGDOM HEARTS”</td>
<td>Goichi Suda</td>
<td>“Killer7”, “LOLLIPOP CHAINSAW”</td>
</tr>
<tr>
<td>Koji Kenjo</td>
<td>“Custom Robo Battle Revolution”</td>
<td>SWERY (Hidetaka Suehiro)</td>
<td>“D4: Dark Dreams Don’t Die”</td>
</tr>
<tr>
<td>Masahide Kitoh</td>
<td>“Dead Storm Pirates”</td>
<td>Takashi Tokita</td>
<td>“Chrono Trigger”</td>
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<tr>
<td>Yoshihiro Kishimoto(Digra)</td>
<td>“R.B.I. Baseball”, “Baraduke”</td>
<td>Tomoyuki Yamada</td>
<td>“Uncharted Waters Online”</td>
</tr>
<tr>
<td>Kazutaka Kodaka</td>
<td>“Danganronpa V3: Killing Harmony”</td>
<td>Yohei Yanase</td>
<td>“Majin and the Forsaken Kingdom”</td>
</tr>
<tr>
<td>Hiroyuki Kotani</td>
<td>“Patapon”</td>
<td>Yuichi Yokoyama</td>
<td>“Blaze Union: Story to Reach the Future”</td>
</tr>
<tr>
<td>Yasumi Matsuno</td>
<td>“Tactics Ogre: Let Us Cling Together”</td>
<td>Koji Mikami(Digra)</td>
<td></td>
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<tr>
<td>Year</td>
<td>Submission</td>
<td>Theme</td>
<td>Theme reason</td>
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<tr>
<td>2011</td>
<td>57</td>
<td>Stopover (途中下車)</td>
<td>In memory of narrator narrator of the TV program using the same phrase</td>
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<tr>
<td>2012</td>
<td>92</td>
<td>Men and women simultaneously (男女同時)</td>
<td>In the 400–meter medley relay of swimming, men and women acquire medals simultaneously</td>
</tr>
<tr>
<td>2013</td>
<td>111</td>
<td>Temperature control (温度コントロール)</td>
<td>In memory of Yoshida, who served to cool down the Fukushima nuclear power plant</td>
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<tr>
<td>2014</td>
<td>157</td>
<td>Self–growth (自己増殖)</td>
<td>From Ice Bucket Challenge to support ALS</td>
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<tr>
<td>2015</td>
<td>242*</td>
<td>Open (オープン)</td>
<td>Submission are open to everybody [normally attendee only]</td>
</tr>
<tr>
<td>2016</td>
<td>195</td>
<td>Ring/Ling (リング)</td>
<td>From the 5 rings of the Rio Olympics</td>
</tr>
<tr>
<td>2017</td>
<td>184</td>
<td>Baton touch (バトンタッチ)</td>
<td>Japanese athletes took medals at the world championship 400–meter relay</td>
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</tbody>
</table>
Submission

- Organizing Committee Provide Theme
  - Theme which is difficult to imagine the games as is
- Create concept sheet and upload it to the system or submit it on site
- Concept sheet will be displayed at web site and on site board at CEDEC
  - Early submitter will take better place of web and board
Judgement Rule

• Official Judge
  – Judgement by selected judge (skillful game designer and director, educator)
  – Official Judge just check “like” or “not” (almost within 15 seconds)
  – Judge will leave comments and select the candidate of Special Prize named them

• Open Judge
  – Judgement by audience of website
  – If official judge point is same, we consider open judge score
  – Official judge will usually review sorting by open judge score
"Guide! 10 seconds Robot"
Theme: Baton touch

**Positive**

**Nagaoka**
It is easy to understand what kind of game it is, it is a good impression that the theme is properly digested. Besides making a foothold, if there are various uses of robo out of batteries, the depth as a puzzle will come out.

**Watanabe**
It seems that it will be interesting if you can arrange a gimmick so that the route to the goal is not too linear.

**Yanase**
The making of the proposal is very beautiful and good. Because the takeover action where corpses remain has a precedent, it is a pity that the novelty is weak. I wanted elements unique to robots.
2013 Best Sheet(111) “Easy Tera Form”
Theme: Temperature control

Hiraro
I thought that the motif of temperature control is compatible with "garden observation type AI game". There were many competing proposals, but the project plan here is particularly wonderful in the world view.
A somewhat nostalgic image was pretty lovely, I felt outstanding! I want to play! !

Mikami
I like this visual. But it is wasteful that the user can operate only the direct change in switch.

Yanase
The concept that terraforming can be done with a combination of living things to send is interesting, and the sheet is also very beautiful. But is it strange for themes to control living things freely by switching between day and night?
Takahashi
I like this kind of thing. You have to work hard on the system etc, but at the real live venue, everything will be able to control?

Matsuno
I think that the means of "singing songs well" and "singing poorly" are important, but it is regrettable that there is no reference to that means.

Swery
The temperature control is the result, and the center of the game is in the performance part, so it feels like changing ordinary rhythm games and dance gates.

Miyagawa
The strategy method and the score are a little confusing.
Result and Comments are achieved
Conclusion & Thank you

• There are few University which teach game development but many Universities and Researchers conduct Game Researches
• Peracon (a unique game design contest) are conducted in corporation with famous game designer and director and the result is archived

Contact
Koji Mikami (mikami@stf.teu.ac.jp)
Twitter: @mkmtut
URL: http://mkmlab.net/
(I will put my full version of presentation on web site)
Supplimental
2011 Best Sheet(57)  
Theme: Stopover

"I Drop Off"
2011 Best Sheet(57)
Theme: Stopover

Positive
Abe
It is a very simple game nature whether it is a success or a failure by pushing a button with matching timing.
By produce a “get off” a variety of in life, likely to be able to provide the fun will come out involuntarily laugh (black humor, including).

Negative
Suenho (SWERY)
The project completion of the planning document is high, imagining various spreads.
However, in fact it is a project of “variation = fun”, so if you make it low budget, you may feel that it was surprisingly shallow. Ignoring the manhours and making judgments in the proposal book, I can make it to the number of web votes as it is well done.
"Switch Detectives Double Heart"
2012 Best Sheet(92)
Theme: Men and women simultaneously

Positive

Miyake
Play can be imaged at the moment. Various ideas are likely to come out when brainstorming.

Ishikawa
There are a lot of ideas of swapping men and women, but it was nice to know what I could and what happens at the moment I saw it. The composition of the document is also good.

Negative

Yasumoto
Although the ADV part is good, the necessity of switching the sex is difficult to understand in the ACT part.

Sugawara
I think that the degree of completion is very high. But, in myself, it is impressive that "swapping" is different from "simultaneous"... It is regrettable.
2013 Best Sheet(111)
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The strategy method and the score are a little confusing.
2014 Best Sheet(157)
Theme: Self-growth

Japan "total dandelion" plan
2014 Best Sheet(157)
Theme: Self-growth

Positive

[Okura]
I was impressed with the point of view of using the ultimate random element "wind direction", which is in cooperation with real data, and nothing can be done by human power.

【Endoh】Idea focusing on breeding of plants. The idea of taking the wind part from the weather forecast to make it an element of the neglected part is good. If the theme is weather forecast wind and abandonment, the main line is how quickly you can reach the destination with a wind-free balloon that can only handle the timing of takeoff landing. With the nationwide total dandelion, the purpose is blurred and it is difficult to motivate the end of play.

Negative

[Shimoda] If all is linked with natural phenomena, there is no room to play as a game.
2015 Best Sheet(242)
Theme: Open

“10 seconds dash”
Iwatani
Doors not knowing whether to pull or push, shapes of the knobs are strange, escape walls to break through and so on can be considered diversely.

Nagaoka
I thought that it is good to connect simple ways to open various doors to game properties. I thought that it would be nice if there was a promising funny opening way, such as opening the door with a pistol shot with a locked door.

Shimoda
I do not know the meaning of 10 seconds in this case. It can be said that all the obstacles of the so-called run system game were made into doors.

Endoh
A game system that feels like it already is. As this idea alone got bored with one minute, it should have suggested a fun amusing as a metagame.
2016 Best Sheet(195)
Theme: Ring(Ling)

“Climb Gulin Tower”
The basic idea is excellent. It looks good as a visual. There seems to be some problems in actually playing games, but I thought that there is a possibility of ripping.

It seems that the task of making the tower and the element of protecting the hero make a dilemma well. However, it seemed that “dead lock” easily occurred, so it was still better if there was an idea to overcome it.

Does the character automatically avoid it to some extent? Even if there is nothing to do by player it will be stressful, if player can control by themself it will be work. The picture is cute.
2017 Best Sheet(184)
Theme: Baton touch

“Guide! 10 seconds Robot”

ルール

ロボは自分の身長くらいならとべる

電池が切れたとき
スタート地点に次のロボが現れ交代

すごろくボクダ!

デンチキレタ...

あそび

そのまま進んでは10秒では
間に合わないが...

電池切れのロボを
活用すれば間に合う!

これかブロックの
使い方はいつでも

３台でクリアせよ!

電池切れのロボは
足場になる。

指定の台数で
ゴールすればクリア!

ギミックも登場し、いろんなステージが楽しめる!

1度車ると
これかブロック

東京工科大学
2017 Best Sheet (184)
Theme: Baton touch

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Nagaoka
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Research & Development
Control of Enemies’ Behaviors According to the Player’s Field of View in VR Games

Koji Mikami
Tokyo University of Technology
Motivation

- Many previous research indicate that player can see only limited area even though the game has extra wide screen such as VR
  - 40 to 50 degree is effective visual area (Seya 2010, Spherical screen)
  - 44 to 50 degree is effective visual area (Sugai 2014, HMD)

This means...

In VR game, enemies sometime surround player and attack from invisible or unconscious area

Problem

This unexpected “damage” or ”death” from invisible or unconscious area cause disappointment of players
Our Method

• Control enemies’ behaviors according to player’s FoV
  – Prepare 3 area
    • “Response Area”, “Recognition Area” and “Peripheral Area”
  – Changeable parameters
    • "hit rate", "frequency of shot" and "time of cover"