

100 things every game student should know

Or “Things that really irked me while marking”

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2013



Vertex (Singular)
Vertices (Plural)
Or Vertexes (Plural)

NOT: vertexies, vertise, verities,
verticy, vertisee, vertex's, vertees,
virtons or virgins.

Quad: face with 4 sides

Triangle: face with 3 sides

Polys: can refer to either

Polycount: the maximum number of triangles allowed. Even if quads are used.

(This is an initiative test: Roll a D20 now. Bonus points if you know how many triangles are in a D20.)

Your portfolio is only as good as
the **WORST** piece of work in it.

If in doubt, leave it out.

Polycount: It's a target, not a limit:

If the brief requires 15,000 triangles, you won't win the ***AMAZING FRUGALITY AWARD***[®] with 1500.

**You may love to play games, but that
doesn't make you a developer.**

I love to eat dinner, but that doesn't make me a chef.

Developers don't say "mobs".

They say:

NPC

Enemy

AI

Bot

Unless they're Notch.

Are you Notch?

No you are not.

OK, developers of MOBA/arena/MUD/dungeon games say mobs. But it's not used in console or PC development so don't use it there. Also: One of you is @notch. ****waves**** I have a tweet to prove it!

Use the open briefs in your university modules strategically.

History & Conventions: *The History of the JRPG*

Environment Design: *JRPG Cathedral*

Technical Specialisation: *Weapon economies in JRPGs*

Industry Analysis: *RPG Developers in Japan*

Character Development: *RPG Samurai*

Working Game Demo: *漆を塗る the RPG*

Elective module: *Japanese Language 101.*

If your portfolio looks like this, how many entry level jobs are you qualified for? In your country?

Game development is a team sport
for Geeks.

This means communication.

With grammar-Nazis.

*“...the different ways they done it like in the
game play and the scenes ad the props”*

...is not communicating and will incur their wrath.

Studying game development at
university is still university study.

(citation needed)

Damn right it is (Elling, 2013).

Using the Harvard Method.

Elling, K., *N Things Every Game Student Should Know*(4th ed), University of Bradford, 2013

Don't break the fourth wall in assessments.

“But I think there will be enough material on the web to use to get a decent amount of information to produce an essay to a high enough standard to pass this.”

The development equivalent of this is:

“Dear Sony, we think we can find enough ideas from other games to pass your submission requirements.”

...said no successful developer ever.

Everyone loves creativity by typo

“You can customise your character with scaring.”

“To scare your character, press ⊗! Trololol!”
laugh the developers at your job application.



The things you say, may say more about you than you realize.

“There is much greater depth in Alice: Madness Returns than in the original Alice In Wonderland by Lewis Carroll.”

0_0

If an applicant's portfolio is bad enough, developers will save the work to a **GALLERIE ABOMINATI***.

When they need cheering up they will gather round to look at it and laugh.

Do **NOT** be that applicant.

* Don't be too put off by this. It's just a blooper reel for developers. Devs save their own mishaps into these galleries too. It's all part of cutting edge tech and the learning process. But please, please do not put such work in a portfolio! Ever!

Read the brief.

No, seriously:

READ.

THE.

BRIEF.

Already read the brief? **READ IT AGAIN!**

**Do not make the
viewer do this when
looking at your work
online.**

Your first year at uni should be really tough.

This is where you learn how to learn, how to self motivate, and generally get your **** together.

(make sure you have your **** together by the end of this year, or repeat the process at significant financial cost).

CROPPING

S REALLY

IMPORTANT

Understand Brightness & Contrast

INVEST IN A SCANNER

IF YOU AREN'T
CONFIDENT IN
YOUR WORK,
IT SHOWS.

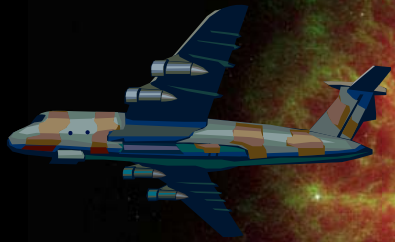
DON'T LET FORMATTING OVERWHELM YOUR
WORK.

IT MAKES YOU LOOK LIKE YOU'RE OVERCOMPENSATING

BECAUSE YOU ARE.

And it's often extremely ugly

AARGH, AARGHH, MY EYES!



Be inclusive: Don't assume the developer reviewing your portfolio is male.

Or white.

Or straight.

Avoid: Porn elves. Undressed or under-dressed women. Unfeasibly large or gravity defying breasts (on anyone). Knicker shots. Brutalized or dehumanized women with sexual overtones. Homicidal 8-year old girls (especially in ghost or AI form). Any and all over-used, limiting and frankly borderline racist stereotypes of criminal men from non-white racial backgrounds including triads, yakuza, mafia, bloods or crips (especially if they are also rappers), insurgents and/or terrorists, middle-class British villains as voiced by Alan Rickman, working class British villains as voiced by Jason Statham, French mimes as voiced by no-one, impoverished Mexican villagers with strong regional accents and apparent limited access to grooming products, education or any kind of empowerment.

All of the above still applies if the characters are in zombie form.

Basic terminology. You really should know this:

Q&A:

Questions and answers

QA:

Quality Assurance

Also:

Usability Testing:

Getting targeted user feedback and player responses to gameplay.

Quality Assurance:

Bug hunt. 

Also:

Quality Assurance:

A completely viable way to get your foot in the door in a games company.

But be aware that not all companies have a path to dev from QA.

Ask first.

Your second year at uni should be really tough.

This is where you learn the majority of the required skills for your discipline.

Know what that discipline is.

If your work takes longer to load than it does to view, you're wasting everyone's time.



Including your own.

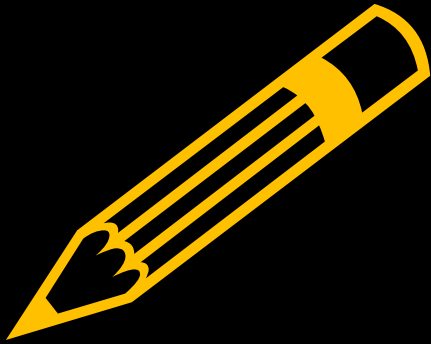


Most developers work in shared spaces and use headphones.
Even Leads & Managers.

Keep the volume on your showreel consistent.

And try not to assume that everyone <3s Skrillex.

Having one of
these is a
minimum
requirement.



At all times.

Attention to detail.

It matters.

“I’m really good at ideas. That’s what I want to do in the team; be the guy who has the ideas.”

Join the queue.

At the back.

Behind the guy who can draw, the girl who can code and the ones who can write, plan, create, evaluate, debug, submit and deliver.

They’ve got ideas, too.

Your final year at uni should be really tough.

**If it isn't almost
breaking you,
you're not working hard
enough.**

Dependencies are important, so don't pretend they don't exist.



**Nobody gets everything right
first time.**

No-one likes to do work more than once, but that's the only way
you can improve it!

<<<Expand your horizons>>>

Just because it doesn't have the word GAMES in it, doesn't mean it's not going to inspire, inform or be useful to you every day for the rest of your creative life.

This is especially true of non-electronic information such as:

- Books
- Museums
- Art
- History

A good rule of thumb for selecting work for your portfolio is this:

“If someone who didn’t know me saw this work, would they think I was a serial killer?”

**NOT OFFICE
FRIENDLY:
REJECT**

Some games studios make extreme stuff. By all means target these studios, but do so in full knowledge that it might turn other studios off completely.

**When opportunity
knocks do NOT ignore it
because you're catching
up on crap you should
have done ages ago.**

**That's how regrets are
born.**



Project management: **Not just for managers!**

Tokenism: the practice or policy of making no more than a token effort or gesture.

~~Token effort.~~

~~Token female.~~

~~Token changes.~~

~~Token comments.~~

~~Token QA practice.~~

~~Token documentation.~~

Does not belong in development practice of any kind.

At a job interview, remember that you're being interviewed by a professional <insert discipline here>, not a professional interviewer.

You can distract them from any awkward moments with shiny work!*

* This does work. "I've brought my sketchbooks, would you like to see them?" is like baubles to kittens.

Txt spk

Duz not luk gud on ur work.

Like eva.

All-nighters may make you feel like a real developer, but they make it less likely that your work will be good enough to become one.

Get some sleep, you'll need it.

When you get some feedback:

Heed it.

Act on it.

Don't ask for more feedback until you've acted on all of the last lot you received.

Otherwise you're all talk.

Get used to benchmarking your work.

Your target is:

INDUSTRY STANDARDTM

KNOW EXACTLY WHAT THAT MEANS.

“Dear Sir or Madam,
I’m a recent graduate and am very keen on getting a job
in the games, animation, visual effects, pre-visualisation
or web industries...”

Signed by reject #732

Target each application to that job only:

- **Cover letter**
- **CV / resume**
- **Showreel**

SCOPE

Sometimes you just have to reduce it.

SCOPE

But be sure to do so in a scalable way.
Otherwise you end up delivering

SCRP-

Which is crud.

If your game idea **starts** with the story it's not a game idea. Stories in games are **optional**.



THE WORLD IS A DARK PLACE. THE GOVERNMENT CONTROLS OUR EVERY MOVE! WHEN OVERCROWDING HITS CRITICAL, THE SECRET POLICE JUST "DISAPPEAR" US! AND ALL THE WHILE I FEEL LIKE I'M FALLING INTO THE VOID OF DISPAIR...

You don't need anyone's permission to make games.

You don't have to wait for "an assignment" to learn something.

Go learn something now.

Well?

Go on then!

The office is not like the internet, no matter how relaxed the office environment may feel.

DO NOT:

Troll. Look at porn. Talk about porn. Bring porn in. Talk about anyone as if they were in porn. Use porn terms/slang. Talk about your sexual conquests (real or imagined) in shared spaces. Create random sexually explicit content, even in lunch hours or overtime. Display nudie calendars, lad-mags or “page 3” on your desk. Display, discuss or admit to owning tentacle-porn action figures.

Many game developers find their life-partner in the office. Just think about that for a minute.

Aim high.
Stay humble.

Team sport, remember?

There is only about 1 degree of separation between pretty much all game developers, world wide.

Don't badmouth anyone.

It will come back to bite you.

Even **years**** down the line. D:**

Personal hygiene.

Is not a “lifestyle choice” when working in teams.

Body odour is NOT a viable way of keeping managers away from your desk*.

* No matter how tempting that can be during crunch.

Easter Eggs: Not just for Easter!

Portfolio items can have them. But like real Easter Eggs they have to be very high quality and not so many to make you sick.

<3 what you do... ...whatever game it's for.

All games are valid games to work on. You can learn just as much working on an adverggame for cats as you can on the latest bazillion \$£€¥ mega-title.

Each title shipped is one step closer to your ultimate goal of dream-game awesomeness.

If an adverggame for cats is your dream-game, then congratulations, you're going to achieve your dreams much quicker than most. Also think of the LOLcat opportunities during user testing! People get PAID for doing this!

Learn to tell a good employer from a bad one.

All games companies have good times and bad times. The trick is to work out the differences between “Bad times” and “Bad employer”.

This is easier with hindsight.

Game developers come in many genders, shapes, sizes, nationalities, ages, body-types, colours, sub-cultures, sexual preferences, religious beliefs or non-religious philosophies. Some are not able bodied, some have physical or mental illnesses.

All of these are valid things for a game developer to be. And if you are a student, chances are most of them will be more experienced developers than you are right now.

Respect that. Online and offline 😊

The lone, “auteur” game developer is a myth.*

*Unless you're Notch**.

Are you Notch?

No you are not.

** or Cliffy B.

Are you he?

Didn't think so.

We have established that one of you is Notch. So one of you (presumably) is Cliffy B. **waves**

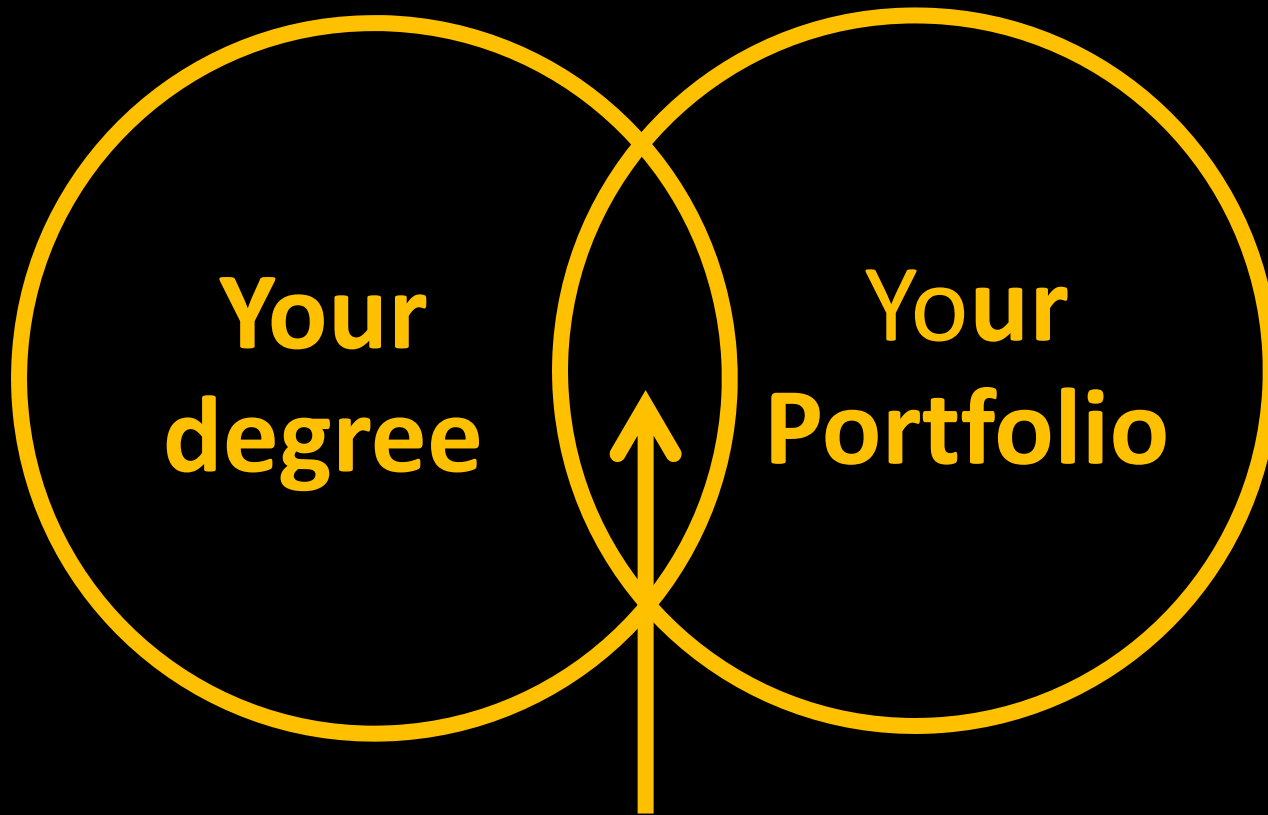
Share what you know.

That's how communities work.

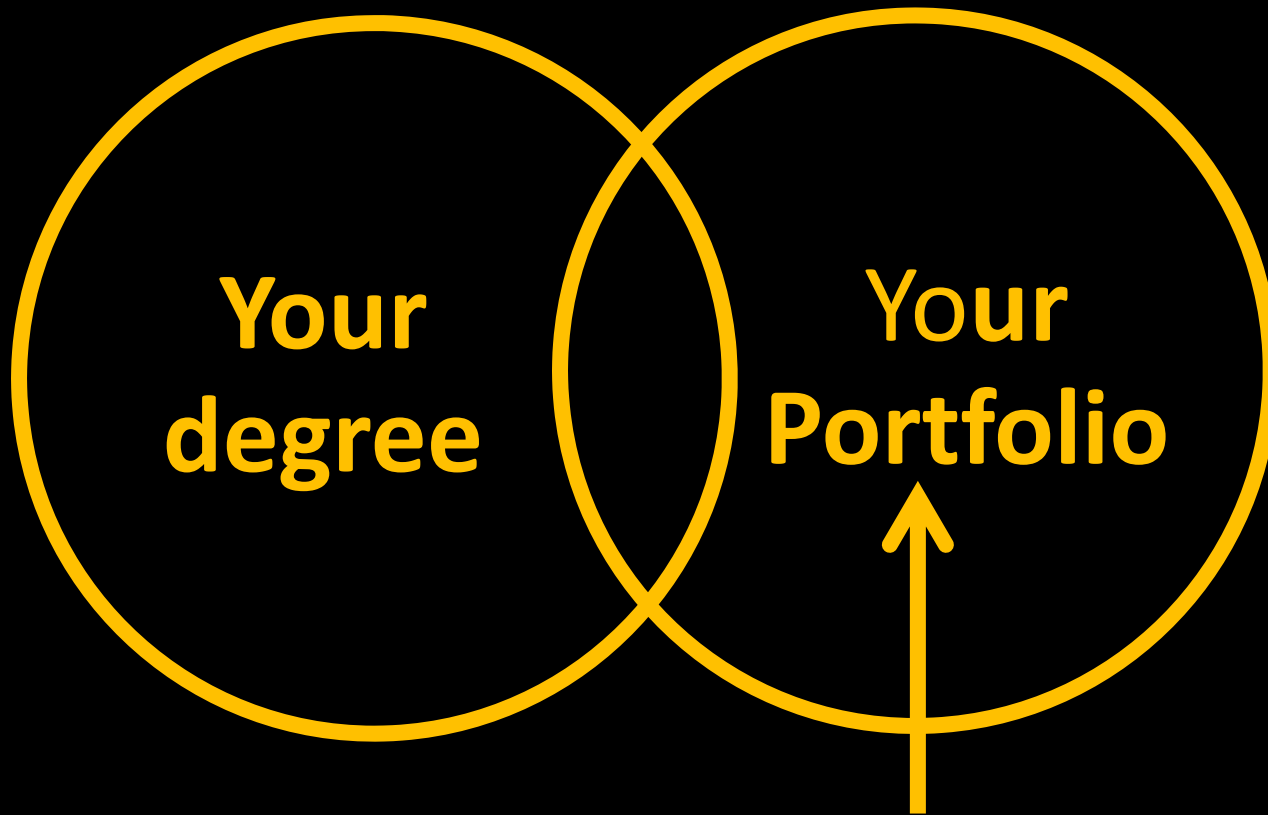
Trust me: No-one is going to steal *content* from your mailed portfolio, and good *practice* belongs to everyone. Stealing the work of others is the mark of an amateur. No professional would ever stoop that low. For shame!

There is no shame in freelancing.

As long as you're working on games, you're a game developer. Even if you're an impoverished freelance, outsource or indie dev who isn't exactly living the dream right now. You're still one of us and we <3 you.



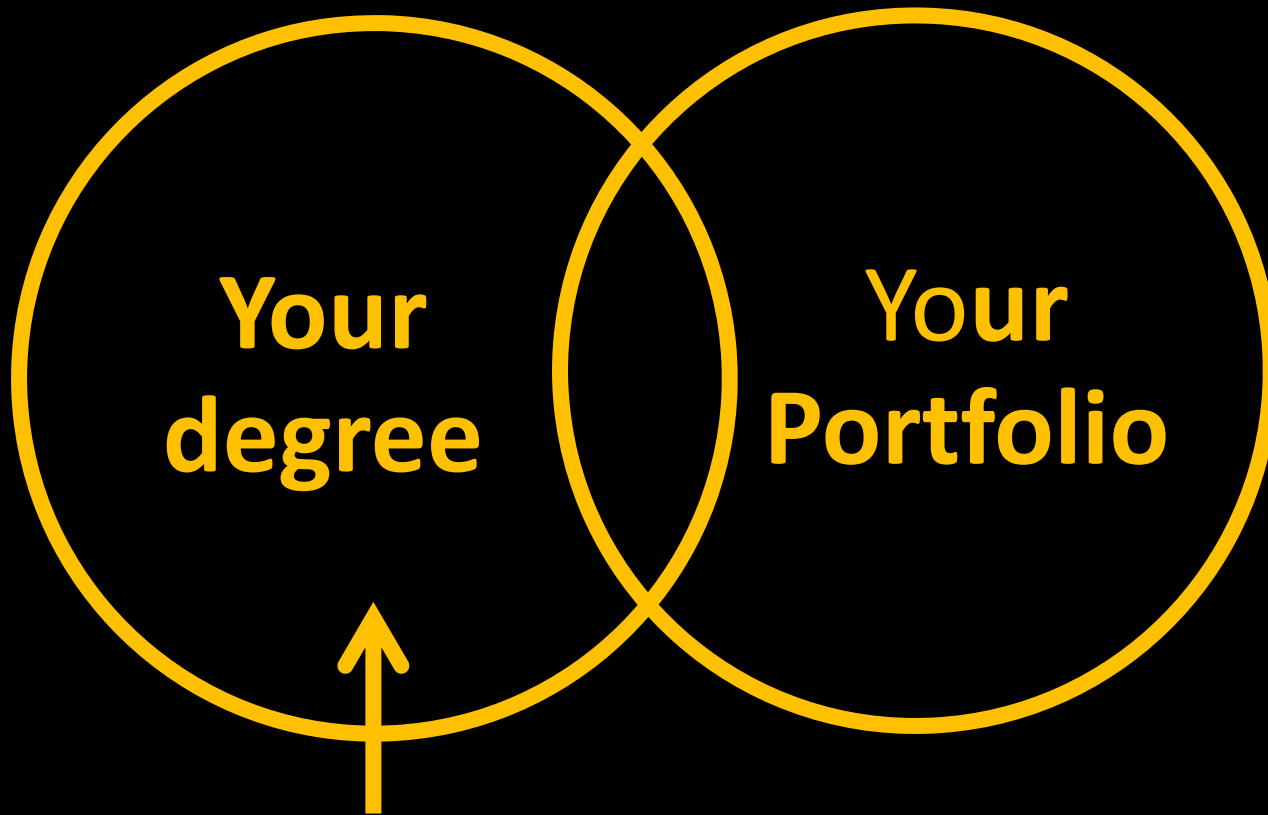
Know where you're aiming your efforts at any given time.
Ideally it should be here.



But you should aim here if you are nearing the job interview stage.
Especially as your interviewer may not have a degree.

Some of us are waaaaay older than game degrees, or didn't want or need a degree to get where we are today.

And that's OK!



If you're aiming here, that means you don't know enough about the industry to get a job later. And you're probably just trying to pass.

“I just want to pass this”

Assessments are not kidney stones.

If you think about them in these terms, maybe you're on the wrong career path?



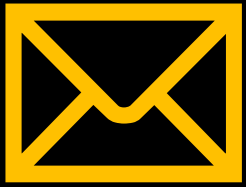
ON TIME

Means 5 minutes early.

Unless the stakes are really high, in which case it means 24 hours early.

Or a week early.

Pssst....Sometimes developers make false internal deadlines to avoid calamity such as missed milestone payments. Maybe you could do the same if graduation is at stake?



To: Recruitment @ A Games Studio

CC: Every games studio in the nation

Subject: *I love what your company does, and
am a perfect fit for your studio.*

ORLY? I feel *so special*

If your showreel uses an obscure codec and can't be viewed by a developer, do NOT reply the following:

- *It works fine on my PC*
- *I thought a cutting edge technology company would have been able to overcome a minor issue like that*
- *What's a codec?*

@\$\$!!!#

**Profanity is a precious and powerful tool.
Use it wisely, or it will lose its magic.**

You found a “workaround” for your design flaw?

Yay for you.

Your audience's “workaround” will be...

...to not play your game.

So just fix it, OK?

mailto:ilikeboobies@email.com

**Do you really want this as your
identifier for job applications?**

Do your work submissions look like this?

- SceneWip5.mb
- Snddnsjsj.mb
- Crap.mb
- Final.mb
- Finalfinal.mb
- Finalfinalfinal.mb
- Finalfinalfinal2.mb
- Lookatthisone.mb
- Log.mb
- Randongcraplhatethis.mb
- Dog.mb
- Randomsomethingelse.jpg
- File.txt

Because they really shouldn't.

Professionalism - or a lack of it – shines through in everything you do.

Or do they start with:

“I’m sorry, but...”

Because that doesn’t help either.

Tutors do not have a “remorse modifier” for submissions to mitigate failing marks.

*Although we could gamify that with points, and hand out a **Remorse Reward** each year for the student with the highest score.*

Word counts matter.

They are there for a reason.

Use them wisely and avoid:

- Padding
- Going off topic
- Repeating yourself
- Padding by stating the obvious in a way that takes quite a lot of words but really isn't saying anything new
- Repeating yourself but in a different way
- Padding, wadding, lining, extemporising, extraneous content or going on any other kind of *Synonym Safari*™

Creativity counts!

If you can't be bothered to:

- be creative
- strive for originality even within established norms or constraints
- look beyond your initial idea
- actually enjoy and actively want to do the above

Then get used to the phrase

“Would you like fries with that?”

**Denial is not a learning tool.
So don't lie in reports.**

We can tell.

“...im willing to provide my services to improve the animation industry level”

You do realise this implies you think you're better with 0 years of experience than they are with ∞ years?

**That's not just ignorant.
It's downright insulting.**

REJECT

And grammatically wrong, too.

The above remains true even if you were “kidding” and was posted on your social network site. Because prospective employers can see that too unless you've set your privacy settings accordingly. Well? Have you?

Actually this is really important:

Manage your public profile.

**Prospective employers will Google you.
What will they find?**

While it is not possible to completely control your Google results, you can help yourself by keeping your personal and professional life separate. Use privacy settings on your Facebook pages and picture tags by friends, and keep your Twitter trail professional or make it anonymous.

Never use your personal social network profile as a portfolio: No-one wants to trawl through embarrassing nightclub photos of you while searching for your work.

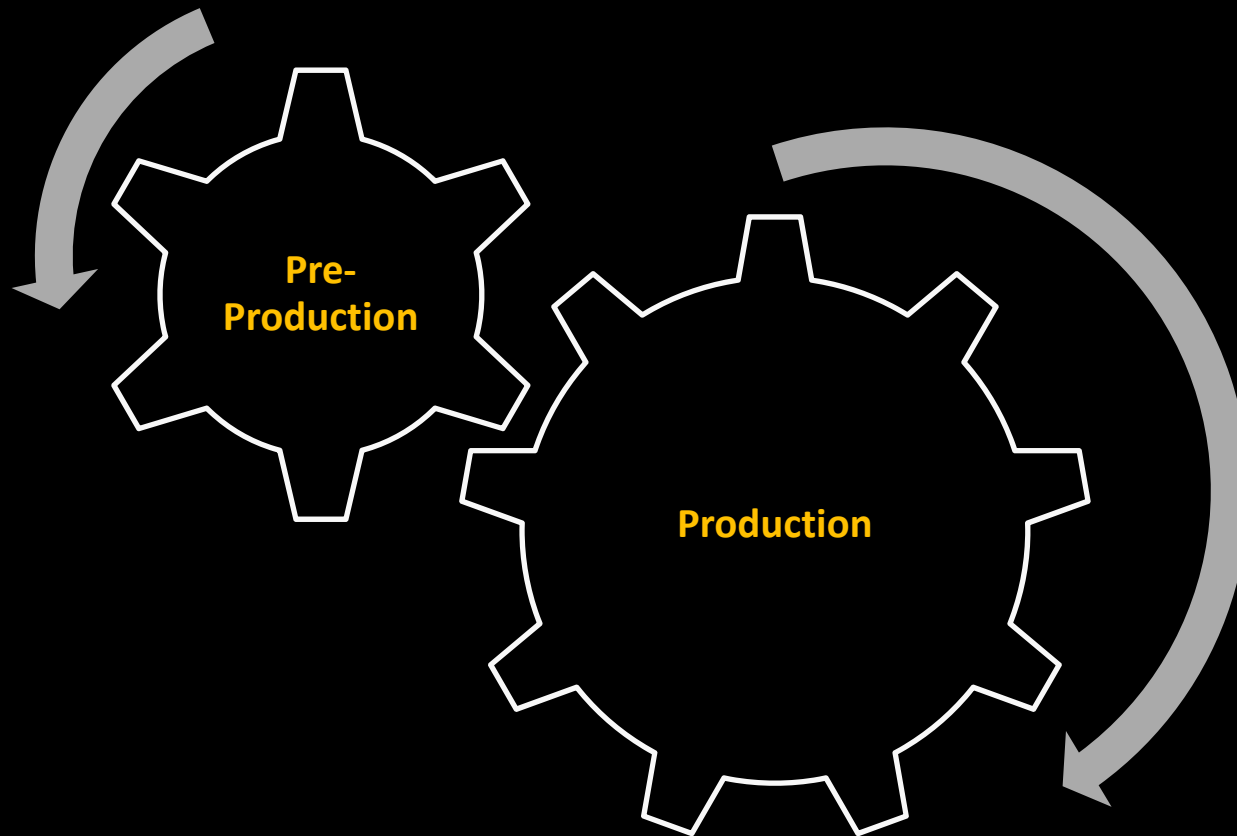
Observation is the origin of all learning.

Play like a developer

Observe, analyse and interpret games you play:

- Reverse engineer visual influences in the art direction
- Deconstruct any in-game economies
- Evaluate game-play successes and failures objectively
- Analyse bugs when you encounter them

What do they reveal about the way the game was made?
How could they be improved?



You have to understand a process before you can implement it properly:
Relying on tutorials to get you through production means you haven't
finished pre-production.

Don't ask for feedback less than 24 hours before a deadline. You're not going to like what you hear, and you certainly aren't going to take action on it.

BECAUSE THERE ISN'T TIME

Teamwork: Make sure your team is functional at least 24 hours before a deadline.

Yes, this is totally related to the previous slide.

Seriously:

**Artist = someone who makes
things LOOK PRETTY**

**Designer = someone who
makes things FUN TO PLAY**

If you use the wrong term you look like a dweeb and will enrage artists, designers and your tutors alike, who can make a formidable mob when united.

But beware regional differences:

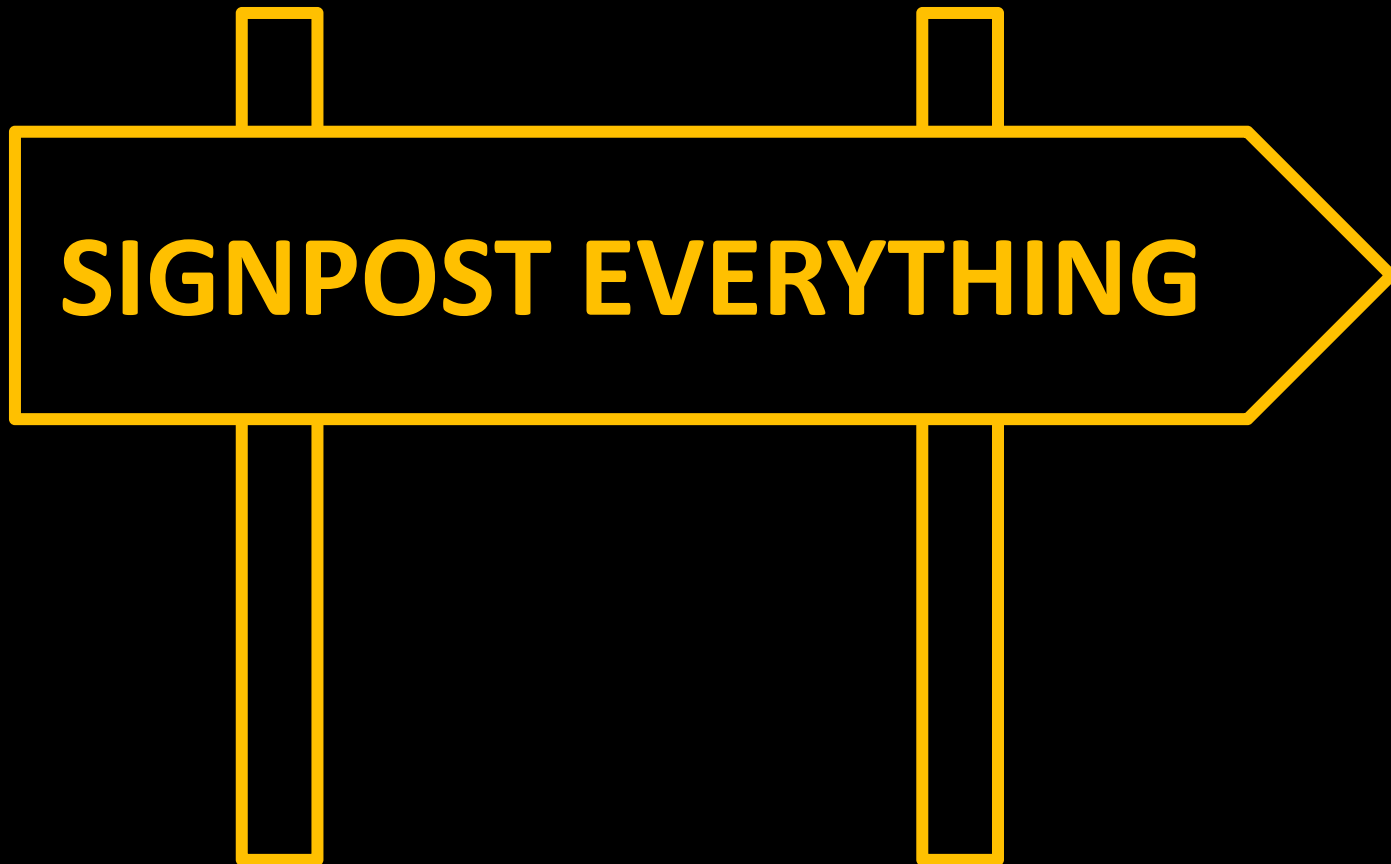
**UK: Developer = anyone making games =
artist, animator, designer, programmer,
audio, project management.**

**USA: Developer = software engineer =
programmer.**

I was once at a conference where this dispute nearly led to a fist fight*.

We academics are bad-@ss!

*I would have won, BTW



Not literally! But in game play terms, players need cues. So put them in.

In industry, how many chances do you get to succeed?

The truth is, nobody knows.

But it's safe to assume that every chance is the only chance. So act accordingly.

Specialist vs. Generalist

The industry has places for both,
but in different contexts.

Which one are you?

Hint: If you don't know, you are not a specialist.

Mathematics:

Not just for programmers!

Geometry is maths too. As are statistics. And probability. And proportion. And even project management and budgeting. Maths is everywhere and it isn't hard. Especially when it's applied. So let's debunk that myth right here.

Going Indie isn't easy. Don't think it's the short route if you get rejected from a larger developer.

****tries to quell the tide of fury from hardworking, highly skilled indie developers****

You can never know too
much about how to use
Excel.

Because its power is
ORSM!

Can you articulate the gameplay?

Can you do so:

- Simply?
- Effectively?
- Intuitively?

Or is your target demographic “clairvoyant geniuses”?

If that is your target demographic, adjust your sales forecasts accordingly.

Healthy body

Clean mind

Tidy code

Only one of these is mandatory.

All players are aligned “Chaotic Evil”

They will gleefully and wilfully break everything.
Once you embrace this, it's surprisingly easy to reduce your gameplay bug count during Beta. Especially if you've let them do this to your precious baby *before Alpha*. Or even better *at the end of each Sprint*.

HUBRIS

Look it up.

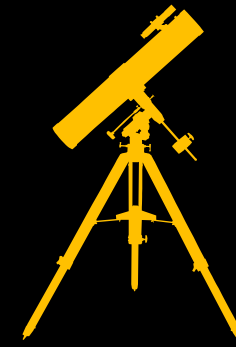
Because it's a powerful word and just one of a great many in the English language that can help you articulate yourself efficiently and effectively. But mostly because it is one of the most repugnant qualities of many a games student or graduate and has no place in a team.

Your colleagues and faculty will most likely be your doorway into the industry.

What do they think of you?

Leave a professional and lasting impression.

They're your first referees, either on paper or via word of mouth.



Current Events

Will impact your work one way or another. Know what they are. Strive to understand the world and use that understanding to make your games more interesting, accurate, insightful or challenging. A myopic world view limits creativity.

Always know which audience
you're developing for.

Preferably before the game
concept is finished.

Otherwise you will have a hard time marketing your game and earning actual money.
As opposed to theoretical money.

Which only has value if you already have vast quantities of actual money, apparently.
That's Capitalism for ya.

If you aren't failing at least a portion of what you do, then you aren't pushing yourself hard enough.

“What is your greatest weakness??”

Bad answers:

- “I haven’t got any”
- “I am a perfectionist”
- “You are!”
- “Chocolate” *

Good answer:

- “From your perspective, I guess it’s the fact that I don’t have much work experience. But let me tell you about the projects I have worked on in and outside of university...”

*I seriously used to say this in interviews. But it was always followed by something real and relevant to the interviewer, that allowed me to show how I was growing professionally.

Shut up and listen.
Really listen.

If game development isn't

YOUR PASSION

**and you think it's tedious and boring after all,
pick a new industry immediately.**

We won't judge you. OK, well maybe just a little bit.
But honestly: It's your life. You need to live it.

My name is Kaye Elling, I'm a grizzled veteran of nearly 13 years of game development in the UK. I've developed on pretty much every game console from the PS1 to the Xbox 360, as a Character Artist, Art Lead, Art Manager, and Project Manager. Some of the companies where I have worked include Gremlin Interactive, Sony Computer Entertainment, and Blitz Games Studios where I shipped many games in the Premier Manager series, the Bratz series, helped out on Formula 1 and had a whole ton of games canned before release including some ****really good ones I still can't tell you about****. In 2008 I got tired of the volatile nature of the industry and went to teach at the University of Bradford. Shortly afterwards the coalition government was elected and started to decimate that sector too. I am very sorry about this, and it is probably not all my fault. The games courses that I run at Bradford University cover games art and game design, and many of the survivors of these courses go on to lead rich and fulfilling lives. Some of them even in the games industry at places like Frontier, Climax, Ninja Theory, Jagex, Lionhead and EA. If you are interested in studying on one of our games courses at Bradford (we have games code courses too but I don't do code), you can contact ugadmissions@scim.brad.ac.uk, because direct contact with me is best avoided unless you can appease my capricious nature with chocolate, LOLcats or live puppy webcams. Especially when marking.

Thanks to the following people for adding their thoughts to help this “51 things” become “100 things” and hopefully even more helpful. Sorry if I’ve missed anyone!

- @sinisteragent
- @JurieOnGames
- @infoxicated
- @caiitlinz
- @one_page_design
- @barog
- @Er0_0
- @asianastroboy
- @BaronLez
- Andrew Crawshaw
- Davil Wilson
- @notch
- @jsummers79
- Kim Pallister
- RL Möllenkramer
- Tyler Coleman
- John Harris
- Ernest Adams
- @EdStern
- @aa_miller
- @Ozmills
- Beau Melo-Robinson