Production is when the idea finally assumes reality. Production deals with preparing your product/service for sale. It includes stock control, assembly, quality assurance, packaging and in the case of a service, delivery. Whether you have a service or product the process is remarkably similar in preparation for sale, so when this manual refers to a physical product, take it that the information applies to services equally well.

In this section you will find:

- Key Production Activities
- Production Resource List
- Top Tips for Production
- Examples of common Student Enterprise safety issues
- Useful Exercises

Key Production Activities

- Use SEW page 25 to review production and complete worksheets
- Have your teams write down their production process
- Complete a risk assessment
- Complete a safe system of work plan
- Costing & pricing the product
- Create a stock control & purchasing plan according to your budget
- Produce/purchase/inspect your product and prepare for sale
- Ask each team to deliver a 60 second presentation on production & product
- Mark up the Enterprise Progression Wall Chart for accountability
- Try out the useful exercises at the end of this section

Production Resource List

- Teachers USB Resource Key
- SEW Page 25: Production
- SEW Page 26: Worksheets No.10, No.11 and No.12 are all production related
- SEW Page 38 to review Costing & Pricing
- Student Enterprise Progression Wall Chart & Excel Spreadsheet
- Internet Research
- TED Talks: Danit Peleg: Forget shopping. Soon you'll download your new clothes

Key Production Activities

Refer to the Student Enterprise Workbook on page 25 to review the production section with your class. Worksheet no. 10 will help to set the structure of this part of enterprise and worksheet no.11 on page 27 is designed to assist in stock control. Worksheet no.12 on page 28 lays out the review process for this section.

Turn to SEW page 38 to review costing & pricing with your class at this point. There is no point in spending a lot of time on production if you have no clue regarding your costs to produce and the price point you can sell the finished product. It may only be a rough guide at this early stage, but you must be able to determine if it looks like it will be viable or not. If you are finding it difficult to determine a cost per unit, sometimes it can be easier to calculate for 50 or 100 units, then divide down for cost per unit. Sometimes labour costs are relevant, sometimes not.

Much of the teachers work in this part of the process is providing accountability. Teams often get stuck when it takes a long time to get answers, etc., so a fresh approach might be needed. A short (60 seconds) presentation on the production process and product to the class by each team can help air the difficulties and then the whole class can jump in with suggestions to help out. Sometimes just the act of preparing the presentations can provide insights and answers for the team.

If the business ends up selling to shops (this is great), just remember that the shop will need profit from the retail price. This is where the product has to have enough value/quality to merit the higher retail price.

Selling to shops, or supplying shops with product, is called wholesaling. When shops sell directly to the customer, it is called retailing. Wholesaling means the producer must deliver into the shops at a price lower than the retail price, so the shopkeeper can make a profit to pay his bills and his own wages. The producer could use wholesaling and retail, selling the same product at two different prices, depending on the sales strategy.

For wholesaling to work and generate profit for the producer (your team), the production/purchase cost should be about 1/3 of retail, the student enterprise will get 1/3 for their profit and the retail shop will get the final 1/3 for their profit. This is the ideal scenario; it does not always work out like this, so be particularly careful in costing and pricing when supplying shops. The benefit is that usually the sale volume is higher as you can have multiple outlets. Allow extra start up cash for stock.

Quality assurance is vital. A process must be put in place to check each item for sale prior to delivery to the customer. A service will need feedback from the customers as you deliver and also critical self-analysis of what went well, what could be even better if...? Somebody already in the industry can be consulted on this aspect of the business. We automatically regard our own work as higher value and better quality, than others might, if asked for their opinion, or asked to buy. Ask for opinions and feedback for improvement on your team's product before it is offered for sale.

An excel spreadsheet can be very useful to create a quick purchasing budget, especially if there are multiple quotes and pricing options. The information can be used to devise a stock control and purchasing plan. This is nothing more than getting down on paper how many widgets to be purchased, from whom and at what price, thereby arriving at the total money to be spent. Knowing this amount before spending it is the critical point of learning in budgeting for purchases. How many widgets you purchase and how many you will hold for sale is your stock level. Planning how many widgets to hold and at what point you will order more widgets is called stock control. See page 27 of the SEW for more information and a worksheet to complete.

Ask your teams if they are willing to put in the work to get something done, even if it might not be strictly viable at the outset if you were to take into account paying them so many euros per hour immediately. Allocate a cost for time in the cashflow projections and cashflow statement. Record the hours worked and some of this time could be marked volunteer hours, especially if it is a community project or a not for profit enterprise. You are in charge of the hourly rate allocated.

The Importance of Risk Assessment in the Production Process

A Risk Assessment is crucial at this juncture, along with creating a Safe System of Work Plan, to make sure that your students are not putting themselves or anyone else at personal risk and that there is also no risk to property, reputation, or financial loss. This risk analysis must include the production, assembly, sale and use of the product or service.

[Visit www.hsa.ie for further information]

Take the time early in this production process to discover what has to happen in each teams business in order for them to have product in their hands to sell.

If it is a service, this will include promotional literature and brochures, along with a detailed written structure of the service delivery process, be it a workshop, a class, or a cleaning service.

If any team is manufacturing, there must be a written process in place documenting the steps to be carried out. The risk analysis must be particularly rigorous for manufacturing, as the possibility for damage is greater. Even seemingly innocuous products can be dangerous. Take natural handmade soap. Seems perfectly straightforward. One of the ingredients is lye, which is tremendously corrosive to skin. So there is a risk both to the students and the users.

Be really wary of products that are ingested or applied to the skin, as quality control is critical and the liability incurred could far outweigh the financial return from the sales of this type of product. There are many rules, regulations and laws regarding personal products, so research and due diligence is a very necessary part of this type of business production.

The school may have liability as well as the student enterprise, so oversight in all aspects of production and manufacturing is essential.

Rule of thumb for safety: "When in doubt, Don't!"

Safe System of Work Plan (SSWP) is a three-part process:

- Part 1: Planning the activity
- Part 2: Hazard Identification and Control Identifier
- Part 3: Sign off

Risk Assessment

As a designer you must:

- Identify hazards arising from your design
- Assess how serious the risk is and
- Decide what you need to do to eliminate or reduce these risks

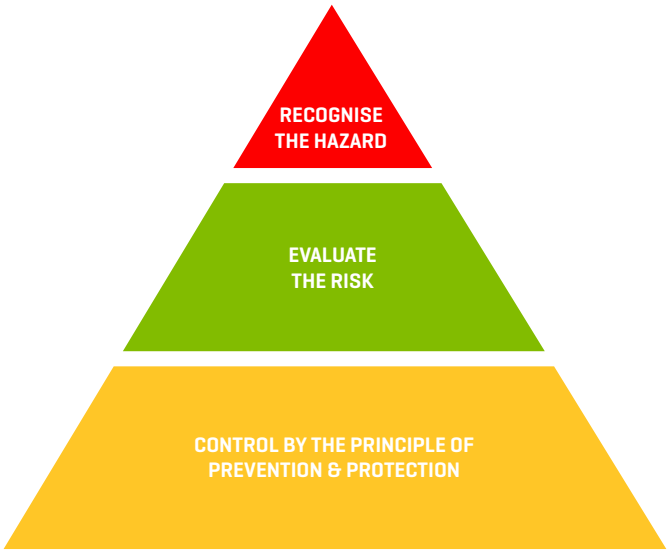
There should be a system in place to document how risk has been eliminated or reduced during the design process and how you have communicated necessary information on any remaining risks.

Duties as a Designer

As a designer you must ensure that the project is capable of being constructed to be safe, can be maintained safely and complies with all relevant safety and health legislation.

You must:

- Identify any hazards that your design may present during construction and subsequent maintenance
- Where possible, eliminate the hazards or reduce risk



Top Tips for Production

- Ask all the class to help give ideas for production, directly after each team gives a short production process presentation
- Select your one best product/service and pursue it to profit. Too many product lines diffuses effort and reduces results
- Research prior to production will pay dividends over and over, especially regarding delivery timelines
- Refer back to your market research data for guidance and direction
- Write down the process before you begin production
- Carry out a risk analysis of all aspects of the production and product use
- Administer a costing and pricing exercise early in the process
- Continue seeking both cost reduction and possibility of added value for price increase
- Sourcing materials and parts online can be frustrating (ask existing businesses to help with advice and\or contacts)
- For online payment capability; use pre paid credit cards
- Manufacturing must meet industry standards; ask shop owners for feedback early on

- Research into product liability is a must
- Stock control and funding go hand in hand; calculate how much you can afford to buy initially
- Get your hands on samples as soon as possible, so order from a few sources straight away if you can
- The best packaging is no packaging, so use creativity to come as close to this as you can
- Stores need P.O.S, Point Of Sale display units for your products; ask shop owners for size suggestions
- If you can source products and link directly to customers, your production costs are low, stock cost is zero
- Ask for help from industry experts, consumers and producers in the market place

Common Safety Issues In Student Enterprises

Product and Suggested Safety Measure

- Rain Harvesting and Storage Container. Ensure product has secure lock on cover to ensure they cannot be opened by young children
- Food Products: Ask the Home Economics teacher for oversight on preparation, health and safety and HSE guidelines
- Children's Toy: Small Parts mean it must be labelled as unsuitable for children under 3 years old
- Chargers and Associated Gadgets: Eg. For holding a mobile phone during charging, can overheat and become a fire hazard etc....
- Meetings With 3rd Parties: More than one student should always attend meetings with third parties outside the school. Make sure students are clear that no such meetings should be attended with less than two students present

Useful Exercises

- Mark up the Enterprise Progression Excel sheet and Wall Chart
- Review Teachers USB Resource Key
- SEW Page 26, Worksheets No10, No.11 and No.12
- Visit www.hsa.ie to review risk assessment and safety responsibilities
- Revisit teams Business Model Canvas for the big picture, and update model if necessary

› View TED Talks: https://www.ted.com/ “Forget shopping. Soon you’ll download your new clothes”

Teacher’s Tip

A Resource Audit is vital to identify what is required to produce.
You will need to consider:

1. What raw materials you will require and where you might source them.
2. What training might be required by yourself and your team.
3. Can you borrow or rent necessary equipment? Are you qualified to use it? Barter?
4. Location: Have a look around your home/local community for a production space.
5. Calculate how much time the production process will take. (Record production times)
6. Work with your finance manager to establish the costs involved.
7. Product Safety And Process Safety is very important (www.hsa.ie, etc.)

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