VIPs VIBES

THE INCLUSION OF VISUALLY IMPAIRED PERSONS IN THE BAKERY SECTOR

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DIGITAL TRAINING TOOLKIT

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1. INTRODUCTION

The main objective of the **Digital Training Toolkit** is to present a series of information and tools that can facilitate the integration of visually impaired workers in the bakery sector and support their efficiency at the workplace. The aim of this document is to significantly contribute to promoting inclusion and diversity in the bakery sector by offering advice on adapting the work environment to the needs of visually impaired people and improving the practical skills - including digital ones - needed to make workplaces more accessible using specific tools and assistive technologies.

On one side, the **Digital Training Toolkit will offer bakery assistants with visual impairments the resources and tools they need to work safely and effectively,** presenting some digital tools and technologies that can ease their professional integration. On the other side, from the bakery mentors' point of view, the Digital Training Toolkit will represent a comprehensive and practical guide to devices and tools – including digital ones - that can be used to **foster an inclusive work environment**.

It is important for bakeries to be accessible, inclusive and risk-free places for VIPs, as all other workplaces. For this purpose, it is also important to have knowledge of tools and technologies which can help visually impaired workers to easily conduct their job tasks into a bakery. For instance, they may need equipment that provides tactile or audible signals which indicate a potential danger for them, such as ovens or moving machinery.

A common assistive technology used in bakeries in this regard could be devices that provide verbal instructions, for example scales with voice output and timers with audible alerts.

Using such **tools and technologies to make bakeries inclusive workplaces requires**, on the one hand, that visually impaired workers receive specific training in this regard. On the other hand, **effective organization and collaboration within the bakery** are essential, with regular practice, supervision, and constructive feedback to improve work practices and safety. For this reason, it is important that **all employees are well aware of the needs of their VIP colleagues, having the willingness to ensure that the work environment is continuously adapted to meet VIPs' needs**, ensuring safety, efficiency, and inclusivity. In this sense, it is important that everybody is aware about the tools and technologies that can ease the professional integration of their VIP colleagues. These measures, if undertaken together with an effective collaboration strategy that implies the involvement of all workers, will help create a safe, inclusive, and productive workspace for visually impaired bakery assistants.

For the reasons mentioned above, this Digital Training Toolkit is addressed to different target groups.

First of all, it is addressed to Visually Impaired People who want to become assistant in bakeries, or who already work in bakeries. In the second place, it is addressed to all employees working in a bakery, especially the ones who want to become "Bakery Mentors" and to get involved in the process of inclusion of their VIP colleagues, making their bakeries more accessible.

Nevertheless, the Digital Training Toolkit will be freely accessible to any other stakeholder interested in fostering the professional integration of VIPs in the labor market, such as VET entities, trade unions, public institutions and the civil society.

This document can indeed be intended as part of a learning pathway that provides new training and job opportunities for VIPs, but also as an opportunity to foster their inclusion in the society as a whole and to involve all citizens in this process, contributing to the creation of a more responsible society.

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2. DIGITAL TOOLS FOR INCLUSIVITY

2.1 ADAPTED TOOLS

In this chapter you can see **tools and techniques that help visually impaired bakers' assistants have barrier-free access in everyday workshop activities.** In this chapter, you can read about techniques that help make the equipment and environment in the current workshop easy to use for visually impaired people with small modifications.

2.1.1 TACTILE MARKER

Both images show kitchen appliance controls with tactile markers added to facilitate positioning for VIP workers.

USEFULNESS

The use of tactile markers in a workshop offers great advantages for visually impaired individuals. These markers provide a reliable way to identify tools, materials and workspaces through touch, enabling users to locate items independently and efficiently.
They help reduce the risk of accidents by clearly indicating hazardous and/or essential areas, fostering a safer environment.
Additionally, tactile markers support a more organized and accessible workspace, enhancing productivity and reducing time spent searching for tools. By creating a user-friendly setup, these markers empower visually impaired people to work more confidently and autonomously.

USEFULNESS IN THE BAKERY

The pictures show how existing devices can be marked so that they can also be used by visually impaired people. They show the switches of two microwave ovens, which have been marked with tactile paint (temperature and minutes).
This greatly helps the independent use of such devices, setting several functions/levels, by the type of marking on the oven switch.

AVAILABILITY

You can find various types of such paint products under the name of Fabric Pen. You can find different colours, we suggest you choose strong colours to make it easier to notice.

2.1.2 COLORED TAPE

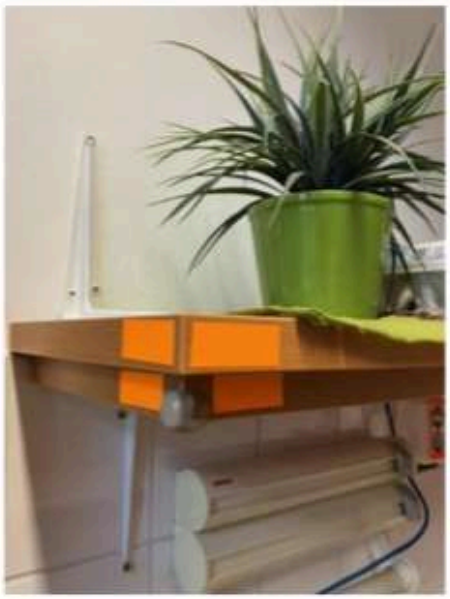


Image 1 *shows a shelf covered with coloured tape in order to avoid potential accidents.*

Image 2 *shows an electrical power outlet marked with coloured tape to draw attention to possible danger*

Image 3 *shows a bakery cooling tray with sharp edges that have been marked with special coloured tape to highlight potential harm.*

USEFULNESS

Using **colored adhesive tape** is highly beneficial for visually impaired individuals as it enhances visibility of critical edges and objects. For example, applying bright, contrasting tape to stair edges helps in identifying step boundaries, reducing the risk of tripping or falling. Taping around the edges of cabinets and shelves makes it easier to locate storage spaces, preventing accidental bumps or collisions.

The tape can also be applied to door handles, enabling users to quickly find and grasp them. In addition, color-coded markers on frequently used surfaces can guide users through their environment more safely and effectively. This simple but impactful adaptation promotes greater independence and safety. By clearly marking these key areas, coloured tape allows for a more accessible and user-friendly environment for visually impaired people.

USEFULNESS IN THE BAKERY

In the bakery, these marking tapes can be particularly useful for marking surfaces that are not fundamentally different from the surface next to or behind them. This could be, for example, the edge of the worktable, which if marked with tape, can prevent someone from bumping into the edge of the table or knocking something over. This can also be done on the edges of shelves, cupboards and railings. The best colours are ones which are most noticeable to the eye, such as yellow and orange. These markings can also be used as a visual warning, for example one can apply tape on the edge of the power outlet.

AVAILABILITY

These tapes are commercially available in different widths, colours and thicknesses (for example, creative stores, furniture stores).

2.1.3 LABELS: BRAILLE AND LARGER PRINTS

The image shows some kitchen spice containers labelled with large, high contrast lettering as well as Braille label.

USEFULNESS

We can create labels for storage containers, shelves, and cabinets in Braille and/or larger print to aid visually impaired individuals in navigating and locating materials and tools. These labels provide a quick reference for finding different types of supplies, making the workspace more accessible. For example, labeling drawers with the types of tools they contain helps users identify the correct drawer without difficulty. Similarly, labels on glass containers indicate the contents, saving time and also reducing the chance of errors. This system allows visually impaired users to work more independently and confidently. By enhancing organization, Braille and large-print labels contribute to a safer, and a more efficient environment.

USEFULNESS IN THE BAKERY

Using Braille labels and large-print labels in a bakery can be highly beneficial for visually impaired individuals. These labels make it easier to identify ingredients, tools and storage areas, reducing the risk of confusion or mistakes. Braille on measuring cups or ingredient containers allows for accurate measurements, ensuring consistency in recipes. Large-print labels on equipment like ovens and timers make it simpler to locate and operate these tools independently. This adaptation promotes a safer and a more accessible environment, minimizing the need for constant assistance. Overall, it empowers visually impaired bakers to work with greater confidence and autonomy.

AVAILABILITY

- You can create Braille labels with Braille typer simply using laminated paper, to make the label more durable and perceptible.
- Braille Labeler:

https://www.amazon.com/Reizen-RL-350-Braille-Labeler/

MORE INFORMATION

- Making Braille Labels – Youtube:

📽https://www.youtube.com/watch?v=a07UlGEojiM

2.2 USEFUL SOFTWARE FOR PC

In this section, we delve into a selection of **useful software for PCs that significantly improve accessibility, empowering individuals with visual impairments to navigate digital environments more easily**.

These tools are indispensable across various settings, including personal use, education, and professional workplaces.

We will highlight three key programs: JAWS, a robust screen reader for Windows; NVDA, a free and open-source screen reader for Windows; and ZoomText, a screen magnifier tailored for visually impaired users.

Illustrative image of a baker using a PC. Source: StokeTake Online Blog

2.2.1 ZOOMTEXT

The image shows the logo of the Software ZoomText inside a computer screen

USEFULNESS

This software serves as a **screen magnifier for Windows**. ZoomText can magnify the screen up to 60x and has extra features, meeting a lot of needs that built-in tools do not meet. But issues - like not being able to read content easily or being disoriented by layout changes - which can be detected in 60x magnification can also be detected at a lower magnification.

USEFULNESS IN THE BAKERY

In a bakery setting, ZoomText's screen magnifier can be a valuable tool for visually impaired staff working with digital point-of-sale systems, recipe databases, or inventory management software.

Its ability to magnify the screen up to 60x ensures that even users with severe visual impairments can clearly read text and interact with the interface. Additionally, its advanced features surpass the basic capabilities of built-in magnifiers, addressing unique accessibility needs.

AVAILABILITY

ZoomText is widely available and can be purchased directly from its developer, Freedom Scientific, or through authorized resellers worldwide. The software is compatible with Windows operating systems and offers various licensing options, including individual licenses and site licenses for organizations. Free trials are typically available for users who want to explore its features before committing to a purchase

MORE INFORMATION

For more information, users can visit the official ZoomText website, where they will find detailed product descriptions, user guides, and video tutorials. The website also provides access to technical support, system requirements, and regular updates to enhance functionality and compatibility. Additionally, Freedom Scientific offers webinars and training sessions to help users maximize the software's potential.

https://support.freedomscientific.com/Downloads/ZoomText

2.2.2 JAWS

The image shows the logo of the Software Jaws inside a computer screen

USEFULNESS

JAWS (Job Access With Speech) is a powerful screen reader for Windows, designed to assist individuals who are blind or visually impaired in navigating digital environments. By converting text displayed on the screen into synthesized speech or Braille output, JAWS enables users to interact with a wide range of software, websites, and documents. Its advanced features, such as customizable navigation and support for complex applications, make it a versatile tool for personal, educational, and professional use.

USEFULNESS IN THE BAKERY

In a bakery setting, JAWS can empower visually impaired staff to manage essential tasks involving computer systems.

In a bakery setting, **JAWS can empower visually impaired staff to manage essential tasks involving computer systems**. For example, it can facilitate the use of digital tools for managing inventory, processing orders, or accessing recipe databases. JAWS enables users to operate point-of-sale software, read instructions, or track schedules independently, ensuring seamless integration into daily operations and promoting inclusivity in the workplace.

AVAILABILITY

JAWS is available for purchase through its developer, Freedom Scientific, as well as through authorized distributors worldwide. The software offers multiple licensing options, including single-user licenses, subscription models, and enterprise licenses for organizational use. A free trial version is also available, allowing users to evaluate its features before committing to a purchase.

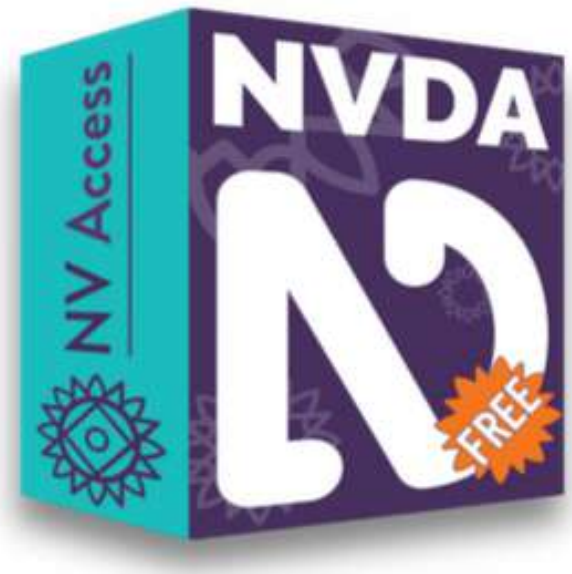
https://www.freedomscientific.com/products/software/jaws/

MORE INFORMATION

For additional information, users can visit the official JAWS website, where they will find product details, tutorials, and technical support.

The site also provides access to regular updates, webinars, and training materials to help users get the most out of the software. Freedom Scientific's online resources and community forums further enhance the learning and support experience for JAWS users.

2.2.3 NVDA



The image shows the logo of the Software NVDA

USEFULNESS

NVDA (NonVisual Desktop Access) is a free and open-source screen reader for Windows that allows visually impaired individuals to interact with their computers effectively. It provides speech output for on-screen elements, enabling users to navigate software, websites, and documents without needing visual input.

NVDA supports a wide range of applications and comes with extensive features, including Braille display compatibility, customizable speech settings, and support for over 50 languages. Its affordability and robust functionality make it an invaluable tool for both personal and professional use.

USEFULNESS IN THE BAKERY

In a bakery setting, **NVDA can be a critical tool for visually impaired employees who rely on digital systems.** It can assist with tasks such as accessing recipe databases, managing inventory in spreadsheets, or handling customer transactions through point-of-sale software. By providing auditory feedback for all digital interactions, NVDA empowers users to work independently and efficiently, contributing to an inclusive workplace environment. Its versatility and compatibility with various software ensure that it can adapt to the unique technological needs of a bakery.

Illustrative cartoonish image of a baker

AVAILABILITY

NVDA is freely available for download on its official website, making it accessible to anyone with an internet connection. The software is continuously updated by the NV Access organization, ensuring its compatibility with the latest versions of Windows and third-party applications.

MORE INFORMATION

Detailed user guides, FAQs, and community forums are also available on the website, offering extensive resources for troubleshooting and learning. Additionally, NV Access provides optional paid support and training services for users or organizations looking for personalized assistance.

2.3 SPECIFIC HARDWARE

These devices help visually impaired bakery assistants to work independently at their workplace.

The goal is to ensure work safety, and a faster and a more professional workflow.

The devices listed in this chapter are affordable, easy to use, hence visually impaired people can use them in their own households as well.

2.3.1 TALKING BAKERY SCALE

The images shows a modern, large display digital talking scale.

USEFULNESS

The talking bakery scale is easy to use and comes with a natural voice output. The talking bakery scale is easy to use and comes with a natural voice output. It has a measuring accuracy up to a single gram with a maximum capacity of 5 kg.

The weight is indicated in country-specific weight units (e.g. dekagram = 10 grams) can be selected.

The large keys on the user interface make it very easy to use for VIP people. All results are shown in easy to see digits on the large display, in addition to the voice output. With the repeat key, weighing can be repeated as often as required.

USEFULNESS IN THE BAKERY

The scale can be used successfully in artisan bakeries. The visually impaired worker is assisted by a large display, an oversize plate, a headphone jack and 6 volume levels. **A talking scale is highly beneficial for visually impaired individuals working in a bakery**.

It allows users to measure ingredients accurately by vocalizing the result, ensuring precise measurements without visual input. This reduces the risk of errors in recipes, which is crucial in baking, where ingredient proportions directly affect the outcome. The scale's audio feedback also enables a faster and more efficient workflow, as users don't have to rely on others for assistance. This tool promotes a greater sense of independence and confidence in the bakery.

AVAILABILITY

In Hungary:

https://bolt.mvgyosz.hu/termek/konyhamerleg-heidl-magyarul-beszelo/

🌍**Internationally**

https://www.caretec.at/product/heidi-talking-bakery-scale/

MORE INFORMATION

🌐 **Website**

https://www.marland.eu/

📽 **Youtube video:**

https://www.youtube.com/results?search_query=talking+bakery+scales

2.3.2 LIQUID LEVEL INDICATOR, AUDIBLE AND VIBRATORY

The image shows a liquid level indicator placed on a cup to signal water level for the VIP employee.

USEFULNESS

The **liquid level indicators provide assistance for people with visual impairment**. This compact, lightweight device is intended to be placed in a mug or cup, has three metallic probes to indicate two separate liquid levels by triggering audible and vibratory alerts. VIP people can store the liquid level indicator on the fridge door, using the built-in magnets, so it's always easy to find when it’s needed.

USEFULNESS IN THE BAKERY

The device can be used on most cups and mugs, as well as glasses, jugs and cooking pots for hot and cold liquids in the bakery. It's also magnetic so it's always easy to find. The liquid level indicator is a practical tool that helps visually impaired individuals pour liquids safely and accurately.

For a visually impaired employee in a bakery, this tool can be particularly useful as it prevents spills, for example when adding water, milk, or other liquids to other ingredients. The device is easy to use: it attaches to the rim of a glass or container and provides an audible or vibrating alert when the liquid reaches the desired level. This not only makes the workflow more efficient but also reduces the risk of accidents or waste. Its lightweight and portable design, ensuring it's always at hand when needed.

AVAILABILITY

In Hungary:
https://bolt.mvgyosz.hu/termek/folyadekszintjelzo-reizen/

🌍**Internationally**

https://shop.rnib.org.uk/rnib-liquid-level-indicator-audible-vibratory

MORE INFORMATION

🌐 **Website**

https://www.rnib.org.uk/

📽 **Youtube video:**

https://www.youtube.com/watch?v=SMkV6_43hgo&pp=ygUXbGlxdWlkIGxldmVsIGluZGljYXRvciA%3D

2.3.4 TACTILE RULER

Image 1 *shows a ready-made, commercially available tactile ruler which provides feedback of length.*

Image 2 *shows a home-made wooden tactile ruler to determine the length of the pre-shaped dough.*

USEFULNESS

A **tactile ruler is typically made of plastic or wood with tactile and contrast enhanced markings**. The unit of measurement is determined by its function. It is important to have easy-to-touch and contrast-enhanced markings and divisions. A tactile ruler is incredibly useful for visually impaired individuals in a bakery setting. It allows them to measure ingredients, dough thickness, or other items accurately by feeling raised markings, ensuring precision without relying on sight.

USEFULNESS IN THE BAKERY

The tactile ruler can be used by visually impaired people for a **specific work process, e.g. when making pretzels in order to determine the length of the pre-shaped dough.** The ruler can be used with great success in artisan bakeries. This tactile feedback helps maintain consistency when shaping dough, which is essential for producing high-quality baked goods. The ruler's clear, tactile markings enable users to work more independently and confidently, reducing the need for constant assistance. Additionally, it helps prevent mistakes that could arise from incorrect measurements.

AVAILABILITY

The measuring device shown in the second image was made by one of the instructors of our bakery, Csaba Biró especially for the students, and it's easy to make it on your own.

Internationally

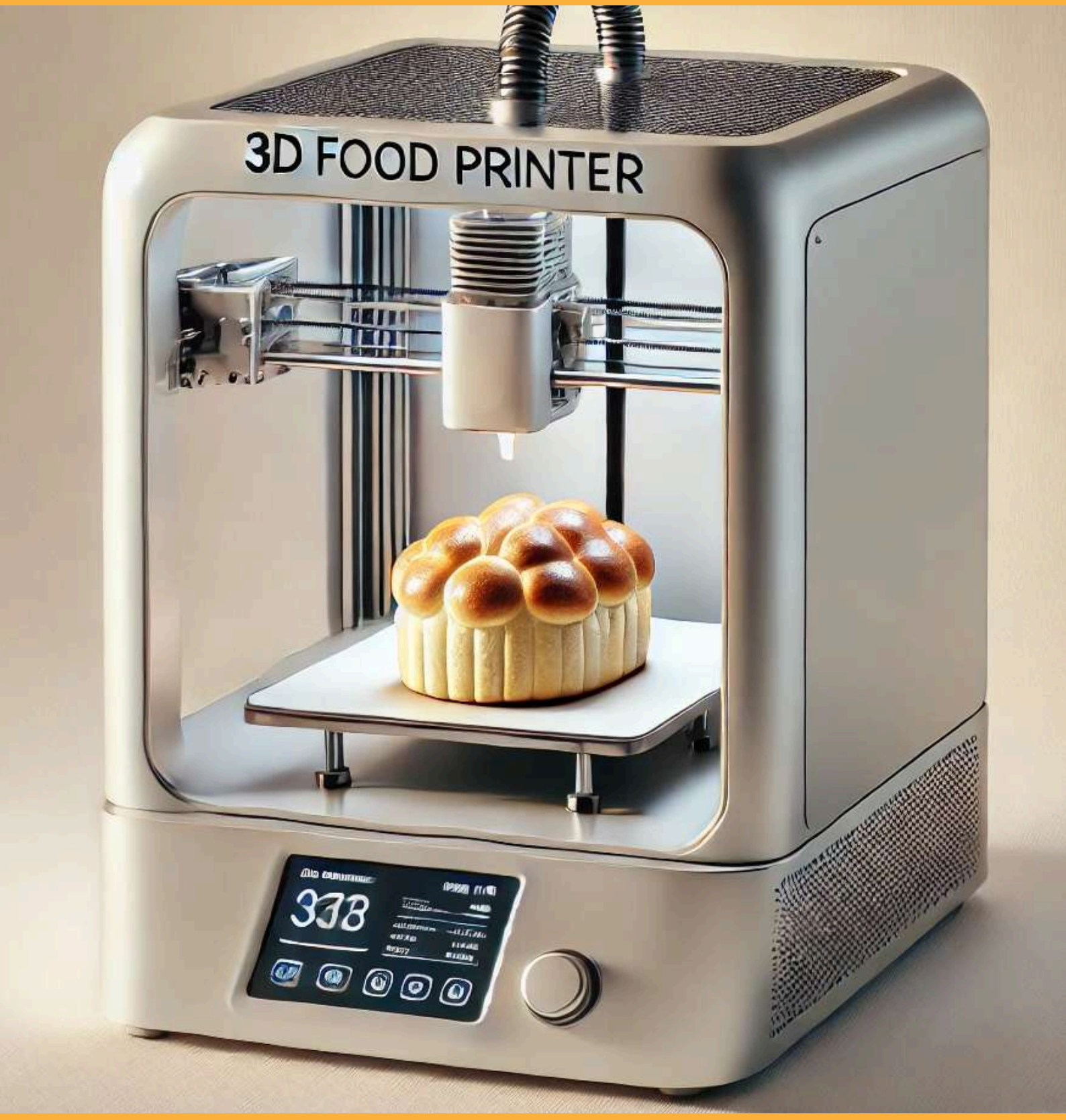
https://shop.rnib.org.uk/tactile-yellow-ruler-30cm-3106

MORE INFORMATION

Website

https://shop.rnib.org.uk/house/stationery/calculators-and-rulers

2.4 3D PRINTER



In today's world, with the use of technological advancements, companies are working towards making sure that individuals who face some sort of disability have the opportunity to feel included in society, like their non-disabled counterparts (Disabled Living, 2019). Disabilities may include hearing loss, visual impairment, autism, and many more.

In this chapter, we will focus on the ways technology, and more specifically, **3D printers can aid visually impaired people (VIPs) and more precisely, VIPs in the bakery sector.**

However, before we delve into the benefits technology has for these people, it is important for us to understand some of the challenges they face in the bakery when baking. We will then introduce the concept of 3D printers in order to get a more holistic approach to how they work, before we discuss the benefits they offer to VIPs. Inclusion is a work in progress for many societies, but with the help of technology and some creativity, great things can happen.

CHALLENGES FACED BY VISUALLY IMPAIRED PEOPLE IN THE BAKERY:

Vision is a sensory mobility, arguably one of the most essential human senses, especially in our daily activities throughout life.

Scientists argue that it is much easier to understand an object when you see it rather than when you feel it (IndiaCADworks, 2016).

Therefore, the lack of visual support can pose certain challenges to people and essentially make them feel excluded if they cannot complete certain activities which everyone else may be capable of doing.

Baking is a concept which may birth challenges for visually impaired people, since they also pose certain safety threats.

To begin with, navigating the bakery space might be a challenge, especially if the individual has no clear concept of where objects and furniture are placed. In addition, certain activities required for baking may also be challenging, such as measuring ingredients, cutting food, or even using appliances like the oven and/or the stove. Utensils such as knives may be dangerous to use, especially as they can cause harm to the individual using them. Bakery appliances such as the oven and the stove may also pose safety threats to VIPs because they are flammable. Due to the fact that both those appliances require heat or fire to operate, a person with visual impairments might find it extremely hard to operate and might result in harming themselves if not used with caution. Having a hard time navigating through the bakery space and utilising appliances may lead to a greater issue; nutritional imbalance (Li et al., 2021). This is where technological advancements such as 3D printers can be useful, a concept which we will delve further into as we move forward with the chapter

BASIC INFORMATION ON 3D PRINTERS:

Before exploring the benefits that 3D printers may have for visually impaired people, **it's important to first understand the basic concepts of 3D printers and how they work**. This will help us better comprehend how and why this technological advancement might be useful for VIPs in the bakery sector. "Additive Manufacturing" is the best way to describe the function of a 3D printer. This essentially means that 3-dimensional objects are created by adding materials together, hence the phrase "additive manufacturing".

Some of the materials used to create objects are thermoplastics, photopolymers, composites, and metals (Markforged, 2024). We must also keep in mind that **there are several types of 3D printers, each used for different reasons, always based on the needs of the user**. It is wise for us to know the outcome we wish to achieve ahead of time, in order to utilise the correct 3D printer.

BENEFITS OF 3D PRINTERS FOR VISUALLY IMPAIRED PEOPLE:

In previous sections of this chapter, we explored some challenges which VIPs face when baking, including the potential unfamiliar bakery space as well as the use of bakery appliances and utensils, and how these can pose a safety threat for individuals with visual impairments. So, let's explore **how the use of a 3D printer can be seen as beneficial for VIPs**.

TACTILE

To begin with, individuals who are not completely familiar with a bakery space, whether that is because they never had the opportunity to see it before (individuals born with visual impairments) or because they are baking in a bakery space for the first time, **may have a hard time navigating their way through the space.** This is where the use of a 3D printer may come in handy. **3D printers are capable of creating tactile maps for individuals to guide them navigate their way through a space** (Carlota, 2022; Jafri & Abid Ali, 2015). Tactile maps are traceable by touch, meaning that an individual with visual impairments is able to feel the map and understand where objects and furniture are placed.

This means that individuals can carry their maps with them wherever they go (Jerman, 2024). Other benefits of the tactile map may be the identification of objects which do not have flat surfaces such as the oven's handle. **A person with visual impairments may have a hard time identifying when to stop walking when reaching a non-flat surface such as the handle of an oven, and may oftentimes walk straight towards it, possibly hurting themselves**. Therefore, a **tactile map will be able to help them identify the non-flat surface objects.**

A tactile map can also be created for any baking surfaces which are not flat. In some cases, stoves are placed on baking tables known as 'islands', elevating the surface of the island. A tactile map will help visually impaired people to navigate their way through the table, knowing that the elevated surface is the stove. The same idea is also explained using the sink, where the tactile plan will mark it as a hollow space in the area where the sink is. Below are examples of tactile maps printed by the Budapest School of Blind.

A 3D printed layout of the streets around the school as a tactile map, printed by the Budapest School of Blind, useful for people to navigate their way around.

A 3D printed layout of the corridor and rooms of the school as a tactile map, printed by the Budapest School of Blind, which can be useful for someone to learn the structure of the building, and where each room is.

BRAILLE

Another challenge previously discussed was the use of measuring cups. Individuals with visual impairments may have a hard time understanding which cups to use since they cannot read the measurements on each, and may have a hard time pouring liquids in measuring cups since they spill. 3D printers have the ability of printing braille (ELEGOO, 2023) on the measuring cups, allowing for visually impaired people to feel and understand which measuring cup is which. Braille is not a language but rather a code/written system by which VIPs can feel raised dots forming certain patterns on the object (American Foundation for the Blind, 2024).

Therefore, using braille on measuring cups will **allow people to feel the raised dots (which represent letters/words) and be able to specify which measuring cup to use depending on what they are baking**.

Utensils may also pose difficulties to individuals with visual impairments, another challenge 3D printers may be able to overcome. Utensils such as knives, forks, and spoons often have very similar designs, apart from the top end of the utensil.

Therefore, **braille can be used on utensils in order for a person to be able to identify what it is they are about to use, or what they are looking for, without harming themselves**.

Other utensils needed for baking such as spatulas and whisks can also be printed with braille using the 3D printer for easier and safer identification. The same idea applies for pots and pans. Differentiating ingredients may also be a challenge, especially for ones with similar shapes such as the salt and pepper. Therefore, braille can be used on salt and pepper containers.

Braille can also be used to customize/alter already existing bakery appliances such as the oven. In order for a visually impaired person to be able to identify where to set the oven temperature, an additional cover can be placed over the oven knob by which an individual can feel the braille printed on the cover. This not only makes appliances accessible but it also makes the bakery a safer space.

Below are examples of 3D printed objects printed using the Emphasys Centre and Budapest School of Blind.

The picture above indicates a 3D printed salt/pepper shaker with engraved braille (not accurate) printed using the Emphasys Centre's 3D printers at the premises.

A 3D printed cube with braille, printed by the Budapest School of Blind.

PROMOTING SAFETY & INDEPENDENCE IN THE BAKERY:

Utilising the 3D printer with the ways shared above not only will it promote a safe navigation through the bakery area, but it also gives the opportunity to individuals with visual impairments to be more independent in the bakery, without needing others to bake for/with them. Having utensils, measuring cups and pans marked with braille makes these tools more accessible and increase independence. Being able to identify the right utensils, measuring cups and pans to use, will help them build confidence and belief in themselves that they can complete tasks which others can too. Ideas such as the oven knob cover also promote a safer way of using the oven and identifying the right temperature depending on what one is baking.

MORE INFORMATION

📽 **Youtube video:** gives a brief overview on how 3D printers work & some of their benefits.

https://www.youtube.com/watch?v=Vx0Z6LplaMU

2.5 MOBILE SUPPORT APPLICATIONS

Visually impaired individuals who wish to find jobs in the bakery sector or be involved in one way or another, have a hard time doing so. This not only negatively affects their confidence, but also steers them away from society and excludes them to a great extent.

The use of assistive technology (AT) which is implemented in mobile support applications is a great way to aid individuals with disabilities. Mobile support applications are a creative, innovative way by which visually impaired people can feel more included, safe, and independent in the bakery.

An important factor embedded in mobile applications is the use of assistive technology. "Assistive technology is an umbrella term for assistive products and their related systems and services" (WHO, 2024; ATiA, 2024) which helps individuals with disabilities and long-term health issues, maintain or improve their individual situations and conditions. More on 'Assistive Technology' can be found in the first chapter of the handbook.

2.5.1 BE MY EYES

NAVIGATION IN THE BAKERY – CHALLENGES IN NAVIGATION:

Some of the challenges visually impaired people face are navigating their way through the bakery.

In a bakery with multiple objects, furniture, and appliances, it is hard for a person with limited or no sight to find their way through.

A concern linked to limited navigation is safety hazards posed by appliances such as the oven, the stove, and the microwave; appliances which require heat and/or fire to operate. Another challenge visually impaired people may experience is locating where different ingredients are, including how to find them, making it hard for them to bake.

"BE MY EYES" SUPPORT:

A prevalent example of an app which helps with navigation of the visually impaired is known as the "Be My Eyes" app. This app allows individuals with visual impairments to be guided by sighted individuals through different spaces, and is available for both iPhone and Android users. "Be My Eyes" works by requesting video support anytime from any place, and individuals will be connected with volunteers of the app for assistance. "Be my AI" is another branch of the app; individuals can take a picture of something, and artificial intelligence (AI) will be able to describe what is in the picture. It is free of charge, can be used unlimited times both day and night for real-time and rapid assistance, and is anonymous for confidentiality purposes. Assistance is also provided in over 180 languages, in over 150 countries for easier and fairer accessibility (Be My Eyes, n.d.). Therefore, if a visually impaired person cannot navigate their way through the bakery, they can utilize apps like "Be My Eyes" for real-time and rapid assistance, without feeling like they need to depend on somebody else to be in the bakery with them. If an individual knows how to navigate their way through their space, it will also minimize the chances of an injury.

An alternative challenge faced by visually impaired people is the difficulty finding the right ingredients in their bakery. The aforementioned app, "Be My Eyes", can also aid in overcoming this challenge.

Using the volunteer video feature and the AI tool, visually impaired people can be assisted in finding the appropriate ingredients they need in order to bake. By taking a picture of a specific ingredient (when using the AI feature), AI can help with identifying that ingredient by reading what is on the label or describing the image completely (Be My Eyes, n.d.), assisting VIPs with recognizing which ingredient is which. Moreover, apps like the above can assist with differentiating ingredients with very similar textures and shapes such as the salt and pepper shakers, or ingredients like sugar and salt which sometimes might be hard to differentiate otherwise due to their similar texture of grains.

2.5.2 "JUST SCALE" & "TALKING SCALE"

CHALLENGES IN MEASURING INGREDIENTS:

Visually impaired people may have a hard time accurately measuring ingredients. More importantly, a greater frustration may occur when using liquid ingredients, which end up spilling over the measuring cups. Mobile applications and assistive technology can be of great help in overcoming this obstacle for VIPs. Apps such as the "Just Scale" and "Talking Scale" are capable of helping one measure their ingredients accurately and safely. The "Talking Scale" app works using Siri shortcuts on iOS, and shares scale readings with individuals who wish to measure ingredients. Individuals can connect their scales to their phones using this app, and the app is able to adjust their scales to different units (grams, ounces, etc.), set the scales to 0 (zero), and read the scale accurately.

Therefore, when a visually impaired person is measuring an ingredient on the scale, they can use the app to ask questions or speak commands such as “What is the scale reading now?” (Smart Chef, 2019; Smart Food Scale, 2024), allowing for real-time and accurate assistance. The “Just Scale” app works in a very similar way.

2.5.3 SCREEN READER APPS/FUNCTIONS

PRINTED AND DIGITAL RECIPES – CHALLENGES:

Traditionally, recipes are written in books and on the web, and an individual must be able to read, in order to follow them. However, visually impaired people do not have the ability to read. An alternative way must be used to aid them in following or finding recipes just like everybody else.

SCREEN READER APPS/FUNCTIONS:

Books and the web can be deemed as a non-accessible and ineffective approach for individuals with visual impairments. Assistive technology and the appropriate mobile apps can help resolve this issue. Assistive technology can help by scanning papers and reading out loud what is on the paper, allowing for VIPs to be guided through the recipe by hearing what’s on the page. In a similar way, recipes found on the web can use assistive technology known as screen reading, in order for a voice-guide to read what is on the screen. This way, individuals who are not able to read, can use their auditory senses to assist them with listening to what is written down. More specifically, screen reader apps can help by reading specific lines or full texts (Vision Australia, 2024); this is all tailored based on the needs of the individuals using the app.

Many computers, tablets, and phones have an already built in screen reader, minimizing the trouble for an individual to actually download an external app and set it up. Virtual assistants like Siri and Google Assistant are found in almost all iPhone and Android devices, respectively, allowing for extra assistance with screen reading, asking questions, identifying things, etc. Apart from Siri functions, iPhones have a built-in voice over system which allows an individual who is visually impaired to know what is going on with their iPhone in real time.

To further this development, apart from screen reading apps, there are cooking/baking assistance apps such as “Cookpad” and “Epicurious”. These apps have implemented voice-guided support which not only reads what is on the screen but can provide step-by-step instructions on how to complete a recipe (The Economic Times, 2014), starting from the ingredients, all the way to the method of baking. The apps can also set timer reminders in order to prevent from over- or under-cooking the food.

CONCLUSION

Being inclusive and accessible are just a couple of the benefits which come with assistive technology and the mobile support applications for visually impaired people. Daily challenges such as navigating their way through the bakery, finding and measuring their ingredients, and reading recipes can all be overcome and minimized by the use of apps discussed above such as “Be My Eyes”, “Just Scale” and “Talking Scale”. Life for visually impaired people becomes easier with the power that technology holds and all the things it has to offer, so it is vital that these applications are exposed, promoted, and shared with individuals with visual impairments, in order to enhance their knowledge surrounding the apps. Knowledge and awareness of these apps will make them feel more included and independent in the bakery.

2.6 AI-DRIVEN TOOLS AND DEVICES

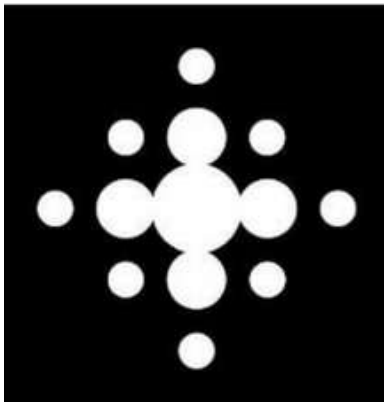
SUMMARY

This chapter **introduces a variety of digital tools designed to support visually impaired people in their work, with a particular focus on their use in the bakery sector.** These tools employ cutting-edge technologies such as artificial intelligence and computer vision to enhance the accessibility of tasks like reading labels, recipes etc., object identification, and navigation at the workplace.

They provide practical assistance that increases independence and confidence in various settings including in the bakery.

The following paragraphs will highlight some of the most effective AI driven tools, detailing their features and functionalities, as well as how they can be set up and used by the VIPs at their workplace. Using such technologies not just increases the confidence and autonomy for visually impaired workers, but also creates conditions for better efficiency and equality.

2.6.1 ENVISION AI APP



The image shows the Envision AI app, a mobile application that uses artificial intelligence to assist visually impaired people.

USEFULNESS

Envision AI app is a software solution that has the potential to enhance the everyday and work life of people with visual impairments. It offers a variety of features such as Instant text, Scan barcode, Describe scene, Find object, find people etc. that can be particularly useful when working in the bakery sector, where precision and awareness of the environment are very important.

HOW TO USE THE APP ON IOS:

To integrate the app with Siri voice assistant, users are required to create a shortcut on their iPhones. Subsequently, each desired function should be added individually according to user preference. It is important to note that a voice command should be recorded for each function separately when adding it as a shortcut. This allows the user to instruct Siri to activate the desired function. For example, the command "Hey Siri, open Envision AI and describe the scene" could be used for one of the features, then the user needs to point or rotate their phone around the and the app will provide and audio description.

HOW TO USE IT WITH ANDROID:

To start, activate Google Assistant by saying "Hey Google" or by pressing and holding the home button on your Android device. You can now control Envision AI with commands such as "Open Envision AI" to launch the app. Once the application is opened, you can navigate through its features using voice commands. As an example, the Text Recognition feature can be activated by saying "Read text," which will then scan and read printed or handwritten text aloud.

Bixby can also be used as a voice assistant together with the app. First, activate Bixby by saying “Hi Bixby” or pressing the Bixby button. To launch Envision AI, simply say, “Open Envision AI,” and the app will start. Then you can say “Identify objects” to use Object Recognition for detecting items or people around you.

USEFULNESS IN THE BAKERY

How can you use it to facilitate bakery work for VIPs?
The app is capable of reading both printed and handwritten text in over 60 languages, enabling users to easily access ingredient lists, recipes, packaging labels, and instructions. This assists visually impaired bakers to adhere to recipes with precision and work productively without requiring supplementary assistance for reading materials.
Object recognition is another important feature for visually impaired bakers. In a bakery setting, the ability to recognise tools, equipment and ingredients quickly and accurately is essential. Envision AI enables users to identify objects such as measuring cups, mixing tools, baking trays, or specific ingredients like flour, sugar, or spices.
The Scene Description feature provides verbal descriptions of the surroundings, which is particularly useful for navigation within the bakery or workspace. Whether it is identifying where different ingredients are located, or understanding the layout of the bakery, this feature helps create a safer and more efficient work environment. It reduces the risk of accidents and enhances the baker's ability to manage tasks autonomously.

AVAILABILITY

Envision AI app is free of purchase and can be downloaded from Google Play Store or App store for both Android and iOs.

MORE INFORMATION

📽 **Youtube video:**

https://www.youtube.com/watch?v=nO1w1mgHh5M&list=PL3QtoP80xRF2rUp381hx_zLPOTRni_Bek

2.6.2 ENVISION AI GLASSES

The image shows the Envision AI Glasses, a pair of smart glasses with built-in AI technology that assist visually impaired people.

USEFULNESS

Envision Glasses are a wearable device designed to assist visually impaired people by offering real-time audio feedback. The glasses are equipped with a built-in camera that captures text and even provides translation, together with a detailed objects, people, and scenes, spoken descriptions to the wearer through audio. This assistive technology employs ChatGPT and Google Glass hardware to capture and convert the visual information in the user's surroundings into speech. The product has an offline mode, which is a significant advantage. However, it functions much more effectively when used in an online mode.

The glasses can be activated in two ways: either by using the touch controls on the frame or by using voice commands. Furthermore, Envision AI glasses are lightweight and hands-free, offering a convenient and comfortable wear experience.

USEFULNESS IN THE BAKERY

HOW CAN YOU USE IT TO FACILITATE BAKERY WORK FOR VIPS?

The device is particularly beneficial for visually impaired people, as it assists in their work experience and enables them to perform tasks independently. For example, as the **VIP assistant arrives at work first of all, they may use the Describe scene feature by taping on the relevant option from the menu.** The glasses then will describe the scene, helping the baker move safely around obstacles and people.

The addition of ChatGPT to the device gives a more detailed description of the surroundings and also allows the user to interact with the glasses, through the Ask Envision feature, for example you may ask “What colour is the door on my right”.

Then the baker may use the Object recognition option to verify the tools that they need to use. For example, the glasses will recognise and announce items such as mixing bowls, measuring cups, and baking trays. The baker may then proceed checking a recipe by simply saying, “Scan text”, or taping the option at the frame menu. **The glasses take a picture (a click will be heard) of the paper that the person is holding and then reads the text aloud.**

It is important to note that the glasses provide users with clear instructions on how to hold the paper correctly. For instance, they may instruct you to **"move document up" or "move document to the right".** Additionally, they will alert you if you are holding the document upside down. Another useful feature of the **"Scan text" function** is the ability to pause or move back and forth through the audio reading, which is very beneficial when working in a bakery.

If the user requires further clarification regarding the recipe, they may utilise the Ask Envision feature.

This can be accessed via the menu and allows asking a question, such as 'Does the recipe contain flour?' or 'How much flour should I use?', the answer could be for instance “200 grams” to which you may further ask “How much is that in pounds”. You may also ask “How much should I preheat the oven to in Celsius?”.

The “Scan text” option is also able to read handwriting, which gives even more options for independent work.

AVAILABILITY

Envision Glasses are not free; they typically come at a cost, which may vary depending on the region and any applicable subsidies or support programs. The price reflects the advanced technology and features integrated into the glasses, designed to assist visually impaired people effectively.

🌐 You may visit the official webpage for more details:
https://www.letsenvision.com/glasses/

MORE INFORMATION

📽 **Youtube video:**

- https://www.youtube.com/watch?v=w36gKjepUNg&list=PL3QtoP80xRF1v8eN18BP6LuWyuQwawc3t

- https://www.youtube.com/watch?v=rtP0oGTFxsI

2.6.3 SEEING AI

The image shows the Seeing AI app, a mobile application developed to assist visually impaired people.

USEFULNESS

Microsoft has developed a free app, called Seeing AI, which has been specifically designed for visually impaired and blind users. The application uses artificial intelligence and computer vision technologies to provide users with real-time audio descriptions of their surrounding environment. The app transforms visual information into speech, thus assisting people in moving around their environment and accessing information independently.

Seeing AI operates by capturing images through the device's camera, then processing the data using AI algorithms to identify and narrate the content.

It can work in various modes, such as short text, document, product (barcode scanning), currency, scene preview (what is around you), colour detection, reading handwritten text and light detection. The app is highly intuitive and accessible, with voice-guided setup and use, making it especially helpful in a bakery where quick identification of ingredients and tools is needed.

HOW TO MAKE IT WORK:

On iOs the user will have to create a shortcut between Siri and Seeing AI by going to the app settings and adding manually each one of the app options that need to be accessed by Siri, and while adding each of the options the screen will display the prompt that needs to be used in order to open the function in need. You can also create custom voice prompts. To do this, you need to set up the Siri Shortcut for specific tasks in the Seeing AI app. Once you have performed an action in the app (e.g., reading text or identifying a product), Siri can suggest it as a shortcut. You can then record a custom voice command for it by going to Settings, Siri & Search on your iPhone, where you will see a list of suggested shortcuts. From there, you can assign your voice command to the action and activate it using Siri anytime. For example, you could say, "Hey Siri, describe this scene," and Seeing AI will perform the associated task without needing to navigate through the app itself. This is especially helpful for improving accessibility and streamlining repetitive actions.

iOs users can use all functions with preliminary made shortcuts, while Android users can have only up to 4 functions at a time that can be linked to the voice assistant. Unlike iOs here you do not need to make any further set up between the app and the voice assistant.

Navigation between the different app features is also possible by simply swiping to the left or right on the screen. The first option on the app is the “Short text”, if you swipe to the left this will take you to the next option in line and vice versa. Each one of the functions is announced by an audio, so that the user has a confirmation where exactly on the menu he/she is. Some of the options e.g. “Document”, “Scene” and “Person” require for the phone to take a picture which can be either done using the relevant button on the screen or if the person has a higher level of vision loss they can conveniently tap on the screen (single or double depending on the phone/operational system).

USEFULNESS IN THE BAKERY

HOW CAN YOU USE IT TO FACILITATE BAKERY WORK FOR VIPS?

While working in the bakery you my use all functionalities. For example, the document feature can be used if the baker needs to read a manual. It can be accessed by simply swiping on the screen, then you need to hold the document in front of the camera which will tell you when it is satisfied with its position. You may have to move the document back and front, until you hear a “Hold steady” command, which means that the app is ready to take a picture. It may take a couple of second for the app to start reading the text aloud.

With the next option on the menu called “product” you can scan barcodes. Rotate the object until the app recognizes the barcode (the app will make a sound) and then read the product for you.

Another useful functionality is **currency recognition.** Please note that it is necessary to set up the currency (within the feature menu itself) in advance in order for the app to recognise it.
Probably one of the options that a VIP would frequently use in a bakery **setting would be "Scene".**

The baker can point their phone to the desired direction, tap (single or double) on the screen, a sound will be heard, and the app will quickly provide a general description of what is in front of the camera. In addition, the person can use the more detailed sub features.
For example, the "explore photo" will give more detailed information about the objects around, all you need to do is move your finger around the screen and the app will give an audio description of everything that you point.

If you use the "More Info" sub feature you will get a very detailed description about what you have captured and you can further interact with the app by accessing Ask Seeing AI and posing a question, for instance if the app tells you "The image depicts a room with wooden table on the foreground.

On the table there are several items including a white casserole, a jar with white powdery substance inside placed in the centre of the table, and a knife on the left of the jar." you may ask "Is there any cup on the table and if yes, where exactly is it located".

The light detection feature detects how bright the light is and the app plays a high-pitched sound. As you move your phone around or up and down, the pitch gets higher or lower depending on how much light there is. This can be used during the baking process if the person wants to check if an electrical appliance is on or off, as many of them light up when switched on (e.g. an oven).

AVAILABILITY

The app is free to use and available on the Google play and App store

🌐 Seeing AI Official Website:

- https://www.seeingai.com/

MORE INFORMATION

- https://www.youtube.com/watch?v=bqeQByqf_f8

2.6.4 ORCAM MY EYE

The image shows the OrCam MyEye, a small AI-powered device attached to a pair of glasses.

USEFULNESS

OrCam my eye is a small camera device with a size of approximately a finger that is designed to be attached to a pair of glasses. It operates by taking pictures and providing an audio description. The device has been upgraded with the addition of its own built in AI.

The device can be operated in several ways. First, you can touch/swipe on the sideway of the device. Another way is by hand gesture, e.g. you can point at text and it will take a picture and read it, or point your wrist if you are wearing a watch and the device will inform you of the current time displayed. Finally, OrCam is equipped with a voice command feature. To activate the device, simply say "Hey OrCam," followed by a command, such as "Read." In addition, the device has a new function called SMART magnifier, which enables the device to read documents from a computer and allows the user to interact with it by asking questions. For instance, if the device is reading a bill, the user can ask it to read the due date. Similarly, if the user is reading a menu, they can ask the device which coffee is served with lactose-free milk.

Finally, the device incorporates a currency reader and a weather forecasting function.

USEFULNESS IN THE BAKERY

The text recognition has an offline mode and can read text selectively, e.g. you may say “Read the ingredients” from a recipe list. In addition, the read mode has a “Scan barcode feature”, which will help when recognizing and exploring different products. Thanks to the integrated AI you can also interact with the text mode by asking it questions and giving it prompts, for example “Tell me if there is cheese in the recipe”. Again, with the AI embedded the feature can summarise text and give you further information when prompted, e.g. “Who is author?’

The device is provided with a stand and a Bluetooth speaker, which makes it very convenient for use in a bakery. You can attach it to the stand and use it while following a recipe, allowing the user to refer to the recipe for guidance and ask questions if needed. Headphones are also included, so that the audio does not disturb others.

Additional features are money and colour identification, facial recognition (you have to pre-programme the device to recognize certain people) as well as object recognition.

To recognise an object you can ask OrCam “What’s in front of me” the device will then typically give a basic description like “A table with bakery equipment” then you may further ask “Give me a full description”. This feature is very handy for product recognition, you may open the fridge and ask the device to give you a full description of the products inside the fridge and then ask for details e.g. ‘Where exactly is the milk located”, and it will respond e.g. “On the very top shelf”.

AVAILABILITY

OrCam device is not free; it come at a cost, which may vary depending on the region and any applicable subsidies or support programs. The price reflects the advanced technology and features integrated into the device.

🌐 You may visit the official webpage for more details:

- https://www.orcam.com/en-us/home

MORE INFORMATION

- https://www.youtube.com/watch?v=xyrNI6tYv6U

- https://www.youtube.com/watch?v=FT6SoR_StwA

2.10 LIST OF USEFUL DIGITAL TOOLS AND LINK:

2.5.1 BE MY EYES

In **Hungary**: https://alkosoft.hu/webaruhaz

In **Hungary**: https://bolt.mvgyosz.hu/

Actilino Braille Display International:
https://www.freedomscientific.com/

https://theblindbakery.com/

RNIB Shop: Talking Bakery Scale with ETS Jug, Adjustable bread slicing guide, Talking food thermometer, https://shop.rnib.org.uk/house

CareTec Innovations for blind and visually impaired people: https://www.caretec.at

SuperNova is a paid app that delivers accessibility through screen magnification, speech, and screen reading technology**.**

Aira - Aira is a service that connects visually impaired people to trained agents via smart glasses or a smartphone app. - https://aira.io/

Dot Watch - The Dot Watch is a Braille smartwatch that displays information in Braille on its surface. - https://www.dotincorp.com/

BrailleNote Touch Plus - The BrailleNote Touch Plus is a Braille tablet with a touchscreen interface that allows visually impaired users to navigate and interact with digital content. - https://support.humanware.com/en-international/support/braillenote_touch_plus

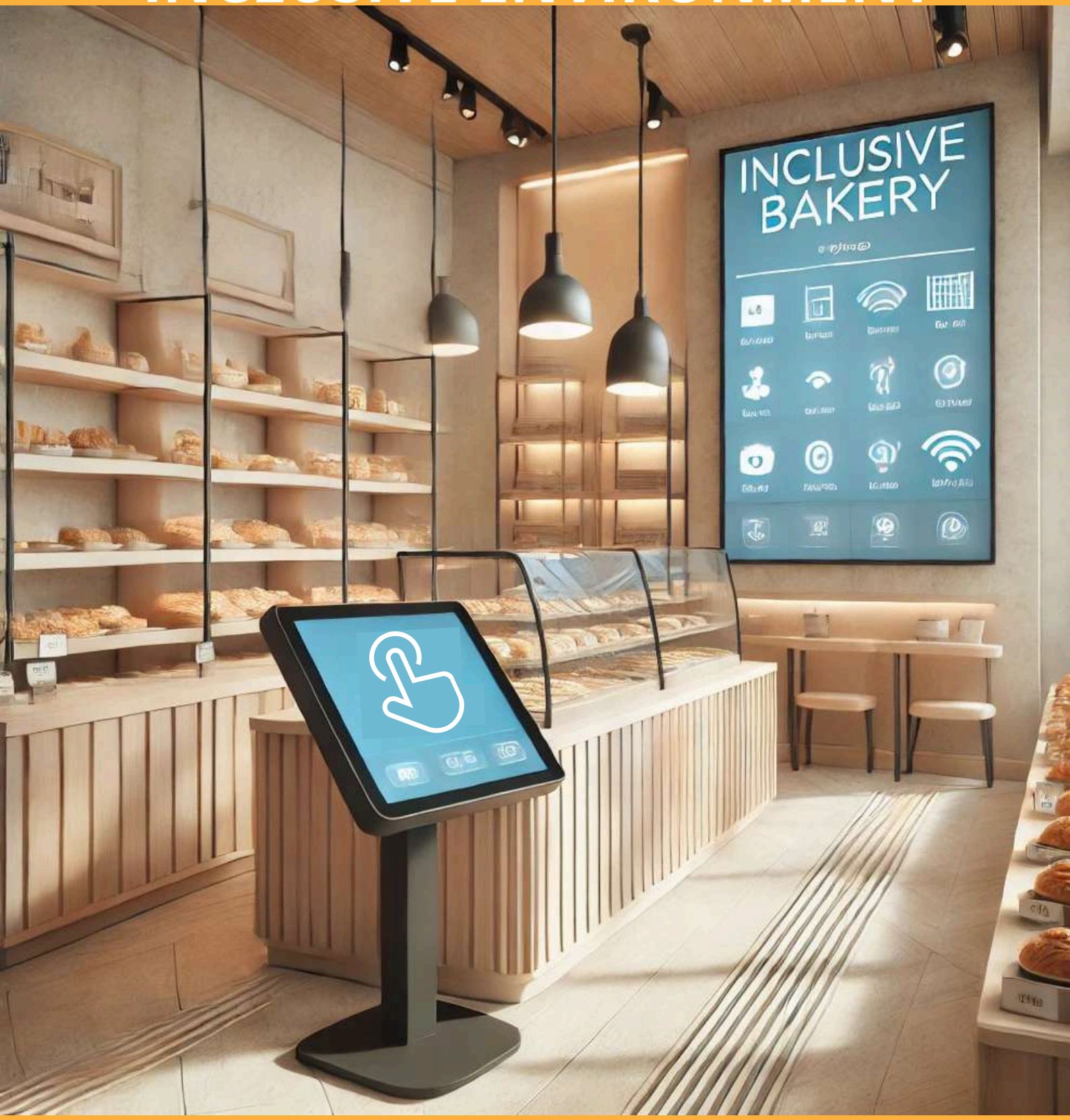
3. GUIDELINES FOR MENTORS AND TRAINERS

SUMMARY

Creating an **inclusive bakery workspace for visually impaired people requires a thoughtful approach from mentors**.

This chapter aims to **provide practical guidance for bakery mentors to support their apprentices more effectively**. By fostering an environment according to their abilities, accommodating their needs, mentors can help visually impaired people in the workplace. The chapter outlines strategies for ensuring safety, encouraging independence, as well as facilitating clear communication. With the right tools and adjustments, visually impaired people can thrive in a bakery setting. By embracing inclusivity, mentors contribute to a more diverse and supportive workplace culture for all.

3.1 HOW TO PREPARE AN INCLUSIVE ENVIRONMENT



3.1.1 HOW TO PREPARE AN INCLUSIVE ENVIRONMENT

- **Keep the workshop in order:** It is particularly important for visually impaired colleagues that the work area is maintained in an orderly manner. Keeping objects and tools in a permanent place helps to work safely and efficiently.
- **Organize and Label Workstations:** Ensure that all tools, ingredients, and equipment have designated spots and stay organized. Use high-contrast labels, tactile markers (like raised dots), or Braille on commonly used items to assist with identification.
- **Provide Accessible Storage Solutions:** Place commonly used items within easy reach to reduce the need for high or low stretching. Use shelves with clear separation and tactile labels to help in locating ingredients quickly.
- **Enhance Lighting and Contrast:** Use bright, focused lighting in work areas to improve visibility for low-vision employees. High-contrast surfaces (e.g., dark mats on light counters) can make tools and ingredients easier to distinguish.
- **Create Tactile Pathways**: Use textured floor markers or contrasting tape to outline safe walkways between work areas, ovens, and prep tables. This can help a visually impaired worker navigate the bakery with confidence.
- **Use Audible and Tactile Equipment:** Replace visual indicators with auditory ones where possible. For example, ovens and timers with beeps, buzzers, or voice alerts help in monitoring time-sensitive tasks.

- **Implement Consistent Layouts**: Maintain a consistent and clutter-free workspace layout so workers can easily memorize locations of tools and ingredients. Avoid moving objects unless necessary and communicate any changes.
- **Ensure Safe Handling of Hot Items:** Use oven mitts or gloves with tactile markers to indicate the "safe" side for holding hot pans. Consider placing a separate cooling area where hot items can be placed out of the main traffic flow.
- **Invest in Accessible Tech and Tool**s: Use talking bakery scales, thermometers, and measuring cups to help with precise ingredient preparation. Digital assistants with voice control can also help with setting timers or following recipes.
- **Train and Sensitize Staff:** Conduct training for all team members on supporting visually impaired coworkers. Discuss practical ways to assist, be aware of safety, and ensure an inclusive environment.

MORE INFORMATION

You can find more details about the topic in this website:

https://viawny.org/how-to-ensure-workplace-accessibility-for-visually-impaired-employees/

https://visualisetrainingandconsultancy.com/resources/supporting-employees-with-visual-impairment/

https://www.bemyeyes.com/

https://viawny.org/how-to-ensure-workplace-accessibility-for-visually-impaired-employees/

3.2 TRAINING ON THE USE OF DIGITAL TOOLS

The image shows a visually impaired person using a laptop with a specialized software

- **Before you plan the training sessions,** be familiar with the current level of digital competencies of a person with visual impairment and be aware whether they are beginner, advanced or expert users of assistive technologies/tools. This preliminary information will help you create a comprehensive plan, which corresponds to the needs of the person you train. For example, you can initiate a short introduction session to ask the person about their experience with digital tools/technologies, preferences, and expectations.
- **Present the person with an exhaustive list of tools and technologies and ask them which of them they would like to use in their work in the bakery**. In our day, there are many tools and apps that offer similar features and functionalities, which give VIPs the freedom to choose between different alternatives according to whether they find the design intuitive enough, accessible and compatible with the operation system they are used to The more the person is familiar with the features and can easily access them the smoother and more efficient the training will be.

- **Start with the basics.** It might be beneficial to introduce the core functions of the digital tool or assistive technology first, and then gradually introduce more complex tasks. It is useful to demonstrate how to navigate the tool's main menu or perform the simplest action, such as logging into the app, before progressing to more complex operations e.g. entering product details.
- **Consider repetition as a method for achieving mastery.** It may be helpful to encourage the repetition of key actions until the VIP is comfortable and confident with the tool. Practice accessing common features, such as adjusting the settings on a digital scale or inputting the same set of bakery orders, on a regular basis. This could help to build muscle memory and confidence.
- **Train them to use the shortcut commands.** Consider providing training to VIPs on keyboard shortcuts, with the aim of improving speed and efficiency in navigating apps. It might be helpful to demonstrate how key combinations can be used to quickly access settings or start a new transaction on a point-of-sale system.
- **Include in the programme a significant amount of practical work**. Ensure that the practical training is based on real bakery scenarios. During training sessions, VIPS should be given the opportunity to enter orders or update stock using the bakery's actual digital tools.
- **Use clear and simple instructions**. When explaining technical steps, use simple language and avoid jargon. Instead of simply stating, "click on the green button," provide a more detailed description, such as "press the large button in the top-right corner of the screen." Additionally, explain the button's function, such as "this button will confirm the order." As a best practice, you may also point the button holding the VIPs finger, after consenting them to do so.

- **Integrate digital tool training with specific bakery tasks to ensure a smooth transition from theory to practice**. For example, when introducing a recipe app, provide guidance on how to enter ingredients while explaining each step of the baking process.
- **Provide guidance on how to resolve any problems that may arise**. It would be beneficial to give instructions on common troubleshooting techniques, such as restarting devices or resetting applications. For instance, if the voice assistant stops working, it is recommend that you restart the device to reset the connection.
- **Place tactile labels on equipment and tools to assist with tactile identification**. Provide labels for keyboards or buttons on touch screen devices to assist VIPs in independently locating key controls.
- **Encourage tactile interaction**. For devices with physical buttons or touch screens, invite users to explore the device with their hands and become familiar with its layout. For example, show them how to use the buttons on a POS system, explaining what each button does and asking them to repeat the action to reinforce their understanding of how it works.

MORE INFORMATION

You can find more details about the topic in this website:
https://training.visionaid.org/

3.3 INCLUSIVE COMMUNICATION

- **Use inclusive language:** i.e. use language that does not use words that create exclusions and/or differences between people, recognising and respecting individual identities and avoiding making assumptions about gender, ethnicity, or other personal characteristics. Example: avoid using expressions that imply gender stereotypes, preferring the neutral wherever possible (better 'person in charge' than 'the man in charge'). Do not use words that may be discriminatory (better 'person with a disability' than 'disabled or handicapped person').

- **Training and awareness-raising:** Provide training and awareness-raising events (seminars, workshops, conferences, etc.) for everyone, explaining what inclusive language is, why it is important and how to apply it in everyday communication in the company.

- **Foster clear, two-way communication:** Encourage a safe working environment in which employees feel free to express themselves and ask questions or discuss any doubts or problems, fostering collaborative communication.

- **Adopt internal policies and guidelines:** Adopting company policies and guidelines that promote inclusive language helps to clearly delineate what is considered acceptable and unacceptable for all people working in that work environment.

- **Promote active participation**: Offer immediate and targeted feedback, fostering the positive reinforcement approach, which helps improve employee confidence and learning, and listen to employee suggestions in a spirit of exchange and active participation.

- **Respect processing and response times**: Wait for the person to process the information before proceeding with new instructions, to avoid overloading staff with tasks, which could lead to a general lowering of performance.

A scene showing a diverse group of people chatting and smiling. Some are standing and greeting each other warmly, while others are sitting around a table and chatting. One person is in a wheelchair and another is an older man with white hair. The atmosphere is inclusive, respectful and welcoming.

- **Create an accessible and inclusive environment:** Make sure your facility is accessible for people with disabilities or people with special needs (e.g. prayer room), to give everyone the opportunity to work under the same conditions and with the same level of possibility.

- **Use sound or tactile signals when possible (for VIPs):** Use sound or tactile tools to signal the completion of an action or the time needed, such as a sound timer for cooking. This helps to maintain autonomy and reduce dependence on visual cues.

- **Describe the environment in a detailed and accessible way (for VIPs)**: Provide precise directions to the environment, e.g. 'The work table is to your left', to facilitate orientation and reduce the possibility of accidents at work.

- **Integrate with tools tailored to the needs of employees (for VIPs):** People who are blind or visually impaired can benefit from tools that facilitate their work inclusion. This means, for example, investing in the use of e readers or documentation written in Braille.

MORE INFORMATION

https://it.pg.com/blogs/comunicazione-inclusiva-azienda-linguaggio-diversita-crescita/

https://www.babbelforbusiness.com/it/blog/linguaggio-inclusivo/

https://it.wyser-search.com/knowledge-center/il-linguaggio-inclusivo-in-azienda-consigli/

https://www.jobiri.com/linguaggio-inclusivo-come-implementarlo-in-azienda/

3.4 SUCCESS STORIES

SUMMARY

This chapter explores **one success story of a visually impaired individual who has found fulfilling employment in a bakery, demonstrating resilience and the value of inclusive hiring**. Alongside this, we share two accounts of how digital tools have become essential for visually impaired individuals in their daily lives. These stories highlight the role of technology in order to enhance independence and accessibility.

3.4.1 STORY #1

The images shows Hungary's first blind baker, Máté Kisfaludy working at Bake My Day bakery

Máté Kisfaludy lost his sight at the age of 18 months. Starting from kindergarten, he attended the School for the Blind, where he earned a vocational certificate in Data Recording. Later, he sought to pursue another profession, so he applied to the school's newly-launched Baker's Assistant Training Program in September 2018.

Máté was drawn to the idea of expressing his creativity in the bakery, enjoyed the physical work involved, and appreciated not having to sit at a desk. His passion for gastronomy wasn't new—he used to sit in the bakery with his mother as a child, and now habitually cooks and bakes for his own family.

For a visually impaired person, **the most challenging part of baking is shaping, by braiding and rounding**. Besides verbal explanations, Máté learned these movements by placing his hands on the teachers' hands to understand the technique.

Máté has excellent orientation skills, moves around independently, and communicates well with others. During his studies, he did his training at Bake My Day bakery, before finally securing a position at their Budapest store in the summer of 2020, immediately after passing his final vocational exams.

He has integrated well at his workplace. "He's humorous, kind, and helpful," says one of his colleagues. For Máté, accessibility involves just a few adjustments: he uses a talking scale, keeps the workshop organized, and ensures tools are kept in consistent places. Máté was the first fully blind certified baker in Hungary.

MÁTÉ'S STORY (IN HUNGARIAN):

https://vince.hu/sztorik/nagy-ervin-vak-pek/

https://diningguide.hu/az-elso-es-ezidaig-egyetlen-vak-pek-magyarorszagon-bemutatj uk-kisfaludy-matet-a-bake-my-day-pekjet/

ABOUT THE BAKERY WITH ENGLISH SUBTITLE:

https://www.youtube.com/watch?v=N9wGG8zI474

3.4.2 STORY #2

Logo of the app Seeing AI by Microsoft

"As a blind person, Seeing AI by Microsoft has truly transformed my life. The array of features has become indispensable to me. The document function lets me snap a picture of my mail, which the app reads back to me. The short text feature is a marvel, enabling me to identify products, from food cans to various spices for cooking, ensuring I maintain my independence in the bakery. Living alone, these tools are nothing short of essential." - Siobhan Meade

Website

https://www.guidedogs.org.uk/getting-support/information-and-advice/how-can-technology-help-me/apps/seeing-ai/

3.4.3 STORY #3

Logo of Be My Eyes, an app that connects 700,000+ blind and low-vision users with 7.5M volunteers and companies via live video and AI, available in 150+ countries, free for users.

In the link below there is a video where a visually impaired girl, Julia, explains how she started using this App and how it has helped her in many tasks such as cooking.

📽 **Youtube video:**
https://www.youtube.com/watch?v=VoUYqBZPYG

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4. ADDITIONAL RESOURCES

The following section provides **additional resources to further explore tools and technologies that support visually impaired individuals in various settings, including bakery environments**. These resources offer insights into best practices, innovative solutions, and practical aids that enhance accessibility and independence. They are valuable references for anyone interested in creating inclusive workspaces.

4.1 RESOURCES

ORGANIZATIONS AND SERVICES FOR THE VISUALLY IMPAIRED:

- Magyar Vakok és Gyengénlátók Országos Szövetsége (Hungarian Federation of the Blind and Partially Sighted),
- Website: **https://www.mvgyosz.hu/**
- Services: Advocacy, legal advice, and a shop for assistive devices.

- **Alko-Soft, IT Services**: Security, computer maintenance, and software solutions tailored for the visually impaired.
- Website: https://alkosoft.hu/

IT SERVICES: SECURITY, COMPUTER MAINTENANCE, AND SOFTWARE SOLUTIONS TAILORED FOR THE VISUALLY IMPAIRED.

- **INFOALAP –** Informatika a Látássérültekért Alapítvány (Foundation for IT for the Visually Impaired),
- Website: https://infoalap.hu/
- Services: Customer support, accessibility consultancy, and discounts on assistive equipment purchases.

- For those with vision impairment, screen readers such as Cobra or Job Access With Speech and the browser plugin Speechify (not free) can read aloud text from a website or digital cookbook. JAWS (Job Access with Speech) for Windows can work also as a screen reader that provides speech and braille output for the most popular computer applications. Works with Microsoft Office, Internet Explorer, Firefox, and much more.

- **"Carmen Sylva"** could be helpful in the bakery sector for VIPs to pass off obstacles. It consists of an ultrasound device to help blind people detect obstacles faster and more efficiently than a stick. The device has a calibration function that can be performed at any time to set safe distances or alert distances. The blind person holds it in their hand and uses it as if it were a walking stick. The production cost of this device is 20 euro, while a stick which has almost the same functions it costs around 1000 euro.

  🔗Link:https://www.digi24.ro/stiri/sci-tech/lumea-digitala/dispozitivul-care-permite-nevazatorilor-sa-detecteze-obstacole-489771?__grsc=cookieIsUndef0&__grts=57609799&__grua=16453d6e2683b8800ded2a27c7f595d9&__grrn=1

5. CONCLUSIONS

Many tools and strategies have been described in the VIPs Vibes Digital Training Toolkit, with the final aim of **promoting the integration of visually impaired workers and creating a more accessible work environment for them through the inclusion of different adapted tools**.

The tools and techniques presented to help people with visual impairments offer many advantages for them and the labor market as well. The evolution of technology and research is making the inclusion of people with disabilities in the baking industry much more accessible. The mobile applications will help them with a better orientation in the workspace, and the adapted tools with Braille, colored tape and voice output will make their work easier, keeping them away from any risky situations they might be subjected to.

Developing tactile tools empowers VIPs to navigate and utilize their workspaces with confidence and independently. As technology continues to evolve, the potential for new solutions will only grow, fostering a future where equality and inclusivity become integral to every professional environment, including the bakery.

Also, **fostering an inclusive bakery workspace for visually impaired individuals depends on the dedication and thoughtful guidance of mentors.** By implementing tailored strategies, promoting independence, and ensuring clear communication, mentors cand create an environment where all abilities are valued and supported. Through their efforts, visually impaired people can thrive professionally, while the bakery benefits from a diverse and enriched workplace culture. Inclusivity is not just a goal: it is a shared responsibility that drives growth and unity for everyone involved.

In conclusion, **creating an inclusive and safe workspace for visually impaired bakery assistants requires various approaches that combine tools, tailored training, and a culture of collaboration and awareness**.

By integrating assistive technologies, fostering mutual understanding among employees, and continuously adapting the environment to meet diverse needs, **bakeries can ensure that all workers, regardless of their abilities, can thrive and contribute effectively.**

This commitment to inclusivity not only enhances workplace safety and efficiency but also sets a standard for equity and respect in the professional environment.

AUDIO VERSION OF THIS DOCUMENT IS AVAILABLE HERE

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VIPs VIBES

DIGITAL TRAINING TOOLKIT

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