

**THE IMPACT OF THE TREND TOWARDS INTELLIGENT PRODUCTS IN CRISIS  
MANAGEMENT**

**( A field study on the Doves of Peace Center for children with autism in the city of Najaf)**

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**ABSTRACT**

The research aims to direct the attention of those in charge of the educational process to the necessity of innovative products designed specifically for them by people of determination. Therefore, it was necessary for productive organizations to design and produce such intelligent products and to identify the actual reality of the impact of using those. The products help manage crises that learners with special needs may be exposed to and the effect this has on them and their families.

The research problem is embodied in knowing the extent to which the Doves of Peace Center for People of Determination directs itself to use the intelligent product and the impact of this on crisis management. The importance of the research stems from the extent of the research center's interest in the intelligent product and its significant impact as one of the factors in the educational upbringing mechanisms for people of determination, which helps in their learning and teaching, which gives special attention to academic institutions in acquiring the intelligent product to support learners with determination who are teachable, by knowing the extent of their interaction with this product—the product as an essential learning and teaching tool in light of the educational environment.

The research reached many results, the most important of which was that the problem and issue of people of determination is not a one-party issue but is shared by several different parties. Each of them has a specific role, namely (the family - the state - educational institutions, and people of determination themselves), so if they join forces and unite... Efforts are made for the group to reach a high degree of scientific, educational, and social excellence by joining hands with the institutions and associations that care for them, in the presence and observation of both the teacher and the family, to transform into positive social behaviors on their part.

The research sample included the Doves of Peace Center for children with autism in Najaf. The questionnaire was used as a tool to collect primary data (60 forms) to determine the questionnaire results by knowing parents' opinions. Given this, preliminary data was obtained through the institution's response. Data analysis and testing of research hypotheses using the Statistical Package for the Social Sciences.

**1. INTRODUCTION**

The fourth generation of the industrial revolution works to transform all industrial, production, and service markets into smart technologies, which later expanded to reveal what is called the "smart product," as there are different terms related to smart products such as: "smart things," "artificial intelligence." ", and smart applications"

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Kiritsis & Gerben see the possibility of using smart products and applications interchangeably as a pioneering industry to enhance users' awareness of the advantages of the Internet of Things (1). (Tumino & Bernardi, 2017:

Smart technologies have affected various industries and production and service institutions, including educational institutions. Change and the expansion of their use have led to the occurrence of many crises that affect the workflow, whether...

These crises are: political, psychological, or social. Therefore, it requires smarter products with more complex functions.

Crisis management sought, in a scientific and organizational manner, to confront unavoidable situations, as it developed advance plans to deal with these crises, and deal with emergency situations when they occur to control them, or to mitigate the negative consequences and repercussions on them, in order to avoid their occurrence (Al-Yousifi, 2015: 12).

The disability crisis for people of determination is a real problem that has prompted many to study it and consider it from its various aspects. It is a widespread phenomenon in various countries of the world, whether in developed or underdeveloped countries. It increases day after day, due to the increase in its causes: genetic, political, and social. (Hadif, 2014: 8 Nunes & et a, 2017: 6)

People of determination have suffered neglect, abuse, and bullying in many societies, so the Convention on the Rights of Persons with Disabilities was established on (December 13, 2006). It is the global agreement that represents a stage.

(Singh&Nasir, 2024:2) A major study for all people living with disabilities around the world, regarding human rights (The research included three sections: The first section dealt with the concept and definition of the smart product, as well as mentioning its most important elements, characteristics, and areas of application. As for the second section, its topics included concepts On crisis management as a concept and definition, types of crises, while the third section included the applied aspect of the research.

## **2. THE SMART PRODUCT**

First: The concept and definition of the smart product:

Smart products are generally solutions to problems that are transferred from service providers in educational institutions to learners of determination. Therefore, this product carries in its essence the possibility of achieving a balance between the asymmetry of capabilities and between actors. Capabilities are the service aspect of the smart product that is designed and produced through: applying a wide range of knowledge and experience of various experts, such as designers of assistive technology products that have met with wider demand (Varshny & (Maass) 212: 2008).

If it is desirable that there be attention to making smart products, then more attention must be paid to how to use those products in daily life. Therefore, the focus is on intelligence and its vision in terms of the interaction between technology and human life. To solve scientific, psychological, and social problems (Hargreaves & Wilson, 2012: 7).

Creating intelligent product systems poses new challenges that require linking intelligence to all forms of value proposition in the context of human behavior. It means acting with logical thinking skills above average (2). (Horváth, 2021)

Intelligence alerts have included location identification, augmented reality, and communication aids for people with disabilities: such as wheelchairs, autonomous vehicles, and others. Most types

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of disabilities among people of determination require various devices, including wearable devices that contain alerts, and artificial intelligence applications such as the use of robots.

Although the term “smart product” is commonly used, there is no agreed upon definition for this concept yet (Matt & et al, 2016: 27).

The smart product has been defined as: those physical and electronic systems that depend on data and information (Tomiyama & et al, 2019:726), which allows them to be created through integration between the physical and digital world.

Mulhouse defined a smart product as: a tangible thing and/or service, or a designed program. (Köth & Seider 2020:4)

From the previous definitions, a smart product is considered a product whose formation depends on information and communications technology: such as small chips, programs, and sensors, capable of collecting and processing information. It must be connected either to the Internet (wired or wireless), or to other devices.

So manufacturers are accustomed to producing smart products separately from service. But there is a great difficulty in that.

It is possible to shift from the concept of the product as an object to the product as an event (3: VALENCIA, 2014). Therefore, the use of smart products will be of decisive importance for the competitiveness of educational institutions that use information and communications technology. So technology can be viewed as: The product is designed in a way that maintains the individual's independence and enhances his well-being.

Second: Elements of the smart product: (Porter & Hepplemann, 2015:4)

All smart products, from home appliances to industrial equipment, share three elements

A- Physical and electrical components: such as mechanical parts.

B - Smart components: such as microprocessors, data storage, control tools, software, and the operating system that consists of a deep user interface.

T - Communication components: such as air ports, protocols, and networks that allow communication between the product and the product cloud.

Assistive technologies greatly enhance their employment, independence, social integration, and participation in education and the labor market (Alchioskaiti & Tali Hatzakis, 2023: 16).

We can say that a product is a smart product if it relies on digitalization and intelligence in its creation. Therefore, the impact of smart products comes through developing features for new products and updating their programs to improve life by using the information of those products in accordance with future generations.

Often, immateriality versus intangibility increasingly affects materiality, and at the same time technological phenomena such as the Internet of Things (IOT) and artificial intelligence (AI) are likely to add multimodal openness to destinations and proactive behavior (2: Pardon, 2020).

So, a smart product is any electronic physical device that has a distinctive nature. It has software-based digital capabilities

3): 2020 Raff :).

Therefore, the main requirement for smart products is the ability to adapt to situations, especially with users and other products.

**Third: Characteristics of the smart product:**

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Smart products are distinguished by several characteristics: they reduce distance through their reliance on information and communication technology, which brings geographically distant distances closer together electronically. In addition to being independent, These products are capable of sensing and storing measurements made by their associated sensing transducers. The Internet, for example, saves time, and artificial intelligence helps develop knowledge, as well as strengthening opportunities to train users for comprehensiveness and control of the production process. (Maryam, 2022: 38).

Lopez believes that smart products are characterized by having a unique identity. They can communicate with other products and create external interaction, as well as share tasks with the machine as a result of the interaction between the user and the smart robotic product (4: Lopez, 2012). In addition to their reliability, as they work according to established standards. , and correctly, and users may be exposed to injury or damage during use, as it provides safety and flexibility capable of continuing under adverse working conditions (Schmidt & Manley, 2020).

**Fourth: Smart product application areas:**

In 1999, Kevin Ashton presented an invention that linked radio frequency and technology with the development of the Internet of Things. The idea behind this was to allow computers to act independently of humans (10). (Wißmann, 2020:

People of determination use different devices according to their disabilities. Each of them needs a smart product that simulates their permanent disability, such as the visually impaired who need glasses, screen magnifiers, or television cameras with text translation, and those who suffer from a cognitive disability need software such as word prediction software, in addition to the use of smart phones, which have functions Additional features that were not previously available such as easy-to-use emergency keys. Therefore, technology is considered the main factor in attracting the spread of information, with its focus on smart products. Therefore, manufacturers are seizing opportunities in the field of the Internet and mobile devices (He, 2018:7). The areas of smart product application are as follows:

A - Smart/connected home: It means a home that contains smart devices that have the ability to communicate with disabled students in educational institutions, and with their non-physical environment. The smart home gives the owner the ability to customize and monitor the disabled person, to increase security, and to participate with the management of the educational institution.

B - The field of learning and teaching: Internet of Things technologies in the field of learning and teaching aim to enable students with disabilities to easily live their lives in educational institutions by wearing devices connected to the Internet and designing scientific programs for learning and perhaps helping to provide services to the teachers themselves.

There must be confidence in using these devices. Trust is the basic and decisive element of an issue that deserves consideration, which is trust in technology. It is required as human relations are replaced by relations between him and that technology. (Ryciuk, 2018:58)

T - Smart clothing: This term means all smart wearable products, such as watches, bracelets, and glasses, whose functions vary between education, health, and sports, and they are among the most important products of Internet things (Kamer, 2017: 49-54).

Students with disabilities need many requirements, including education and entertainment. Therefore, the importance of smart assistive technologies in daily life increases to ensure equal

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opportunities in accessing information and services, which is one of the important areas of concern for learners with disabilities, their families and society as a whole. There are visible and invisible disabilities, including various physical and psychological sensory ones. Of course, these disabilities have many negative effects on the learner. (Ajaj & et al., 2022: 329).

Recent studies show increasing efforts by educational institutions through which learners can interact as systems. Using a smart product that provides much greater value to customers and service providers alike. 2) :.(Yevgeni2023 Customer value is: the final judgment that the customer makes about the product and the size and type of benefits achieved as a result of its use (Mohamed & Abdullah 2011: 8).

Educational institutions strive greatly to meet the needs and desires of learners, and to gain their satisfaction. And generate new opportunities to create value for them. The learner who uses the smart product can be closely monitored, to develop special transactional relationships with him. After these productive institutions presented their smart products based on the opportunities to obtain data, improved processes, as well as the opportunities for improvement that they provide in their operations. Which leads to maximizing value.(Laaper&el at,2019.,:18))

Mahran states that perceived value is: the difference between the perceived benefits, such as the material and non-material characteristics of the product that the customer perceives, and the perceived costs, whether monetary or non-monetary, such as the cost of time, learning, financial risks, and social and psychological damages. And emotionality (2020:11, Muhammad).

Smart service systems work to combine the perspective of the learner and the service provider regarding value creation by using an intelligent product that fulfills the needs and desires of learners and their families. The use of smart devices, smart things, and other digital technologies is a strong trend in many different industries and services (Beverungen, 2017: 6). Smart product service systems are characterized by their modularity, which leads to the development of learner-specific offers. For him, the perceived value, compared to purchasing individual partial services, lies in the integration of components. Smart product providers effectively differentiate themselves from competitors while simultaneously increasing learner willingness to pay (Scum, 2023:2).

Educational institutions have realized that the most aware, knowledgeable, and talented teachers are the hope of societies and an essential and effective pillar of development and progress. Perception is a mental process through which an individual receives and processes sensory information, and interprets the information he receives. So it is a process of organizing and interpreting the sensory data that arrives from feelings to increase workers' awareness of what surrounds them (3: and others, Maryam). He must have intelligent talents and apply the standards used in new, high-tech technologies with uncertain returns (58). (MARQUARDT, 2017)

## **CRISIS MANAGEMENT**

### **Concept and definition of crisis management:**

First: Crisis management: Crises have accompanied man since he was found on this earth, and he dealt with them according to his available capabilities to confront them and limit their effects. A crisis is an unusual situation that involves a decision-maker who loses control over events, and the causes and results are intertwined (14: Mustafa, 2024).

Crisis management is one of the modern concepts that has gained tremendous popularity in administrative circles. It is defined in the Administrative Encyclopedia as expressing the ability to maintain stability (Dawoud & Hisham, 2018: 17). The crises that occur in educational

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organizations or institutions are nothing but sudden changes that occur in their internal or external environment without any expectation of them or an obligation to avoid them. No institution in the world is entirely immune from crises. Instead, it must be aware of them and stand up to them frequently, Although it survived crises for many years. The cause of crises is a collective collapse in the process of making meaning and structuring roles, and the result is the collapse of the social system (Boin, 2008: 8). It can be said that crises may come from a sudden event or accident as a result of neglect or misuse of things. Accuracy and attention to detail are crucial aspects of crisis management, especially when ensuring safety (Dani, 2024:2).

Problems with mental disabilities are one of the long-term effects of disasters. In the past decade, technology has been used to reduce the effects. People with limited income take mental health problems for granted (Hassankhani & et al.: 7).

The need for practical understanding, awareness, and skills to manage and build a crisis is more urgent than ever. Who would like to work in a frustrating field to teach determined learners the correct life behaviors in education?

**Second: Characteristics of crises: Three characteristics separate a crisis from other painful incidents (Ulmer & others, 2015: 22-23).**

A - Surprise: Crises may generate opportunities in which the institution expects to increase its strength more than it was before facing those crises.

B-Threat: Crises are dangerous moments or turning points in an organization's life cycle.

T- Limited response time

Third: Types of crises: The type of crisis is determined by the degree to which institutions know the type and nature of that crisis. And on the extent of her understanding of the consequences if they occur. In this regard, it is possible to distinguish between different types of crises (25-4 02:2, Ahmed & Muhammad):

1- Classification of crises according to the nature of the occurrence: the crisis caused by the person himself, such as neglect, terrorism, threats, kidnapping, and accidents.2-Natural crises: These crises occur without a person's intervention but rather as a sudden event, such as crises resulting from natural disasters, such as earthquakes, volcanoes, and hurricanes. They are characterized by the depth of their impact and their generality in effects.

3- Regarding the frequency of their occurrence, they are of two types: (recurrent periodic and non-periodic).

4- In terms of the depth of the crisis, This threatens the institution's survival or not, as it causes damage to its organizational components and foundations.

5-In terms of impact: The general description of crises can be made according to their amount and size: the impact of the crisis on the performance of the institution in which the crisis occurred and the amount of damage resulting from it.

Stages of crisis management (12-13: 2016, Radaida):

The crisis goes through several stages, the most important of which are:

1- Preparing for a crisis: All methods and procedures that institutions take and provide in preparation for preventing crises before they occur.

2- Containing the crisis: Preparing and preparing to confront crises by institutions, preventing them that may be caused by the spread of crises, and reducing the damage resulting from them if they occur.



3- Restoring activity and balance: using ready-made programs tested by institutions and developing appropriate solutions for possible crises.

4-Learning from the crisis: Considering the crises that occurred as previous experiences, institutions must learn from us and consider feedback to evaluate and improve their operations to reduce crises in the long term.

**4. STATISTICAL ANALYSIS OF RESEARCH DATA**

1- Demographic characteristics:

The significance of the demographic breakdown of the research sample, as presented in Table (1), is evident. It provides a comprehensive understanding of the gender, age, educational attainment, and profession of the participants.

The number of males reached (17 answers), at a rate of 28.3%, while the number of females reached (43 answers) at approximately 71.7%.

The answers varied according to age, as the age group (18 - 30 years) scored (15), i.e. 25%, and the group (31 - 40 years) scored (only 4), which is the lowest (6.7%). The group reached (41 - 50 years) is the highest at (23) with a rate of (38.3%), while for the category over 51 years (18) with a rate of 30%.

There is a discrepancy in academic achievement, as the results of the field study recorded that the “Bachelor’s” category was the highest with (18 answers), i.e. (30%), while the primary category and below reached (9), i.e. (15%).

As for profession, the results of the field study recorded that the category (employee) was the highest with (33 answers), i.e. (55%), while the number of categories (retired) or less was (5), i.e. (8.3%).

**Table (1) Demographic characteristics of the research sample.**

Percentage	Repetition	Category	Property
28.3	17	Male	Gender
71.7	43	Feminine	
25.0	15	18-30 Years Old	Age
6.7	4	31-40 Years Old	
38.3	23	41-50 Years Old	
30.0	18	51 Years And Over	
15.0	9	Elementary School And Below	Academic Achievement
16.7	10	Middle Or Middle School	
21.7	13	Diploma	
30.0	18	Bachelor's	
16.7	10	Master's Degree	Occupation
55.0	33	Employee	
11.7	7	Student	
15.0	9	Housewife	
10.0	6	Winner	
8.3	5	Retired	

1- Normal distribution of data:

To show the normal distribution of questionnaire data and ensure that these data follow a normal distribution or not, as the importance of this stems from providing the validity of what we are conducting from statistical analyses of the study hypotheses that require that data on variables follow a normal distribution, the Kolmogorov-Smirnov test was performed (Z test).

The results of the standard distribution test for the two questionnaire variables showed that the significance level of the Z values is not significant, which confirms that the data for these two variables are valid for statistical analysis procedures.

The Z-test results for the two questionnaire variables, presented in Table (2), confirm the validity of the data for our statistical analysis procedures, supporting the research question.

Moral (Sig.)	Value Z	Variable
0.132	0.919	Smart Product
0.147	1.348	Crisis Management

1- Standards of validity and reliability:

The validity and reliability of the two questionnaire variables were measured by estimating the values of the Cronbach, Guttman, and Spearman-Brown alpha coefficients, provided that the values of these coefficients were higher or equal to 0.60. Table (3) shows the values of these coefficients for the two questionnaire variables.

The coefficients, surpassing the 0.60 mark, signify the reliability of the results derived from the questionnaire analysis. This reliability paves the way for the dissemination of these findings to the wider research community.

Based on the results of tests of the normal distribution of data and measures of validity and reliability, confidence is achieved in the questionnaire's validity in expressing the concepts of its variables, answering the research questions, and examining and proving its hypotheses.

Table (3) Validity and reliability coefficients for the two questionnaire variables

Spearman-Brown Coefficient	Guttman Coefficient	Alpha Coefficient	Variable
0.797	0.800	0.816	Smart Product
0.939	0.945	0.917	Crisis Management

1- Measuring the degree of response to the questionnaire's variables.

A one-sample t-test was used to measure the degree of response to the various questionnaire items to show the difference between the arithmetic mean of the item and the hypothesized mean of (3). The relative weight (the sum of the two percentages of responding with agree and strongly agree) was also estimated in Table (4).

In light of this, the relative importance (which represents the sample's opinions about the concept of the statement and the degree of agreement on it) is described as follows:



Table (4) Relative importance criteria for measuring variables items

	Standard	Relative Importance
The calculated t value is greater than the tabulated t (2.00), significant at the 5% level.		Low
	Relative weight less than 60%	Neutral
The calculated t value is smaller than the tabulated t (2.00), not significant at the 5% level.		High

After conducting a one-sample t-test, the following results were obtained, as shown in Tables (5 and 6):

Table (5): Statistical outputs of the one-sample t-test on the items of the intelligent product variable for educating people on the determination

Relative Importance	Moral	Value T	Relative weight	Standard	Middle	Paragraph
High	0.000	32.832	76.7	0.948	4.02	1
High	0.000	52.827	90.0	0.621	4.23	2
High	0.000	33.906	78.3	0.940	4.12	3
High	0.000	53.817	95.0	0.619	4.30	4
High	0.000	36.226	71.7	0.841	3.93	5
High	0.000	31.040	61.7	0.965	3.87	6
High	0.000	30.031	61.7	0.976	3.78	7
High	0.000	23.888	63.3	1.167	3.60	8
High	0.000	38.376	90.0	0.885	4.38	9
High	0.000	21.608	62.3	1.207	3.77	10
High	0.000	30.082	68.3	0.983	3.82	11
High	0.000	44.809	91.7	0.743	4.30	12
High	0.000	58.915	74.7	0.522	3.98	Total

Table (5) shows the results of the one-sample t-test on the items measuring the innovative product for teaching people determination, and the following facts are clear from it:

1- The total paragraphs had a high relative importance, with a relative weight of approximately 75%.

2- All items of this variable were characterized by responses with high agreement on their meanings by respondents, reflected in the relative weight values that exceeded 60%.

3- Some items of this variable were characterized by a high positivity exceeding 90%.

From this, we infer that innovative products contribute significantly to finding appropriate solutions to the crises learners may encounter with their loved ones.

Table (6) shows the results of the one-sample t-test on the items of the crisis management variable for educational institutions for people of determination, and the following facts are clear from it:

A - The total paragraphs had a high relative importance, with a relative weight of approximately 70%.

B - Most of the items of this variable were characterized by responses with high agreement on their meanings from the respondents, reflected in the relative weight values that exceeded 60%.

T-The outputs showed that some paragraphs (1, 2, 3, and 6) received low responses from the respondents, as their relative weights were less than 60%, which indicates their low importance or that educational institutions within the public sector for students with different determinations do not have the ability to reduce the occurrence of crises, lack smart devices to confront crises and mishandle a crisis situation.

D - Paragraph (10) in this variable was characterized by a high positivity exceeding 90%. Respondents agree that parents of students with special needs have an active role in participating in resolving their children’s crises.

Table (6): Statistical results of the t-test for one sample on the items of the crisis management variable for educational institutions for people of determination

Relative Importance	Moral	Value T	Relative weight	Standard	Middle	Paragraph
Low	0.000	24.654	51.7	1.136	3.62	1
Low	0.000	28.174	55.0	0.981	3.57	2
Low	0.000	31.793	56.7	0.914	3.75	3
High	0.000	40.033	75.0	0.780	4.03	4
High	0.000	35.111	71.7	0.853	3.87	5
Low	0.000	31.000	53.3	0.904	3.62	6
High	0.000	33.873	73.3	0.899	3.93	7
High	0.000	30.017	68.3	0.968	3.75	8
High	0.000	34.901	65.0	0.869	3.92	9
High	0.000	49.315	91.7	0.681	4.33	10
High	0.000	25.924	68.3	1.125	3.77	11
High	0.000	34.254	66.7	0.867	3.83	12
High	0.000	47.192	66.39	0.628	3.83	Total

Measuring the impact of the trend toward smart products in crisis management

Simple linear regression analysis was used to verify the effect of the trend toward the intelligent product on crisis management. Below is a presentation of the correlation and influence of the independent variable, represented by the intelligent product, on the dependent variable, represented by crisis management. After conducting the analysis, we list below its statistical outputs:

It is clear from the Table that the F value reached (50.975), which is greater than the tabular F value of (8.49) at a level of significance (0.01) and degrees of freedom (1, 58). Therefore, the intelligent product variable has a significant effect on crisis management, and this effect is substantial. The explanation is shown by the coefficient of determination (R<sup>2</sup>), which explains the change in the variance of crisis management, as shown in Table (7).

Table (7): Statistical outputs of the regression analysis of the effect of the intelligent product on crisis management

Level Of Statistical Significance	Calculated F Value	Mean Square Error	Degree Of Freedom	Sum Of Squares Of Error	Sample	
0.000	50.975	10.918	1	10.918	Regression coefficient	1
-	-	0.214	58	12.422	The rest	
-	-	-	59	23.340	Total	

It is clear from Table (8) that the intelligent product is effective with an explanatory power of (0.468). This means that the intelligent product alone explains 46.8% of the variance occurring in crisis management and that what remains is explained by other factors not included in the analysis. In terms of the beta value, it is clear that any... One unit's change in the intelligent product leads to a shift in (0.823) crisis management.

Table (8): The influential power of the intelligent product in crisis management

The Value of B	Modified Coefficient of Determination	Modified Coefficient	Correlation Coefficient	Sample
0.823	0.459	0.468	0.684	1

**5. CONCLUSIONS AND RECOMMENDATIONS**

First: Conclusions: The research led to several results, the most important of which are:

- 1- There is a positive relationship between the intelligent product and crisis management.
- 2- Using innovative products allows educational institutions to make quick and effective decisions to avoid crises and address them if they occur.
- 3- Parents of learners with special needs have an active role in participating with the educational institution to solve their children’s crises by following them when they use the available smart devices.

1- Educational institutions within the public sector lack an intelligent product, represented by high-tech smart devices that can reduce the occurrence of crises and manage them effectively.

2- The success of teaching learners with special needs is linked to the provision of advanced smart devices.

Second: Recommendations: The researcher presented some recommendations, including:

- 1- The necessity of adopting a product-oriented rather than a customer-oriented philosophy.
- 2- It is necessary to provide intelligent products that help determined learners in their education with great ease and flexibility.
- 3- Educating staff to use intelligent products in educational institutions for people of determination.
- 4- Giving great importance to the use of intelligent products for people of determination in all age groups, by all institutions, and within all sectors.
- 5- Training all teachers on instructions and instructions on how to use existing intelligent products so that they can adequately teach learners of special needs.

**REFERENCES**

- 1- Maryam, Thamer, (2022), Modern trends in tourism marketing in light of adopting the

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philosophy of intelligent products, the case of Algerian cities.

2- Kamer, Alaa Ismail, (2017), Adaptation in innovations in design systems for innovative industrial products.

3- Ulmer, Robert, et al., (2015), Effective Crisis Communication, Moving from Crisis to Opportunity, Dar Al-Fajr for Publishing and Distribution - Egypt, 1st edition, ISBN: 25554.

4- Al-Yousifi, Raneem Samir (2015), A proposed vision for crisis management in general secondary education schools in the Syrian Arab Republic in light of some international experiences.

5- Dawoud, Haddadi, Hisham, Lvilf, (2018), Decision-making and crisis management in the economic institution, a field study with the African Glass Company - Al-Tahir - Wilayat frameworks.

6- Ahmed, Ghaishi and Muhammad, Muraikhi, (2022), The role of information technology in crisis management - a case study - distance education during the Corona crisis from the point of view of students of the Institute of Economic, Commercial and Management Sciences of the Abdel Hafiz Bou Al-Souf Mila University Center.

7- Ajaj, Amer Mahmoud, Al-Huwaiti, Ahmed Muhammad, Al-Zayat, Ola Abdel Moneim, (2022), Study of the Risks of Social Interaction for People with Mental Disabilities, a Comparative Study, Journal of Environmental Studies and Researches, (12) Issued by Environmental Studies and Researches Institute ( ESRI).

8- Radaida Enas Muhammad Amin Ahmed (2016), The impact of the characteristics of the intelligent organization on crisis management.

9- Hadif, Najat Sassi, (2014), The role of vocational training in rehabilitating people with special needs from the point of view of administrators and teachers, a field study in two institutions for people with special needs, the School for the Hearing Impaired and the Psychopedagogical Center for the Mentally Disabled in Skikda State.

10- Alchioskaite, Laura, and Alexandra Koenig, Hatzakis, Tali, (2023), Opinions of people with disabilities on assistive digital technologies: Does it help them become more independent? Euro-Arab Cooperation Forum for the Rights of Persons with Disabilities, United Nations - Beirut.

11- Abdullah, Qalsh, Muhammad, and Mutanawi, (2011), The role of the comprehensive quality management system in improving the customer's perceived value in the services sector, International Forum - Intellectual Capital in Arab Business Organizations in Modern Economies.

12- Muhammad, Mamdouh Abdel Fattah Ahmed, (2020), The impact of digital marketing on the customer's perceived value, Al-Rehab St., Radwa, Yanbu Industrial City.

13- Maryam, Hanishi, Bakhta, Balmsharrah, Elham, Toimi, (2023), Cognition, University of Ghardaia - Faculty of Sciences.

14- Mustafa, Mona Sami Mahmoud, (2024), Crisis Management.

1. Beverungen, D. , Müller O. M., Martin , M., Jan, B., Jan v., (2017), Conceptualizing smart service systems, Electron Markets, This article is an open access publication.

2. Boin, Arjen, (2008), Crisis Management, Los Angels, London, New Delhi, First published.

3. Dani, Andrews, (2024), The Value of AR and Smart Technologies for Crisis Management, PreparedEX.

4. Hargreaves, T., Wilson, Ch.,( 2012), Who uses smart home technologies? Representations of users by the smart home industry, ECEEE SUMMER STUDY proceedings.

5. Hassankhani, Mahnoosh, Alidadi, M., Sharifi, A., Azhdari, A., (2021), Smart City and Crisis Management: Lessons for the COVID-19 Pandemic, PMC.
6. He, Xiang, (2018), "SMART HOME" - FROM A CONCEPT TO A LIVING PRODUCT, Permission for web publication.
7. Köth, Oliver, Seider, Christian, (2020), Products: The New Normal of Product Interaction.
8. Laaper, S., Dollar, B., Cotteleer, M., (2019), Implementing the smart factory, New perspectives for driving value, Deloitte series on digital supply networks.
9. Lopez, T. S., Ranasinghe, D. C., Harrison, M., McFarlane, D., (2012), Using Smart Objects to build the Internet of Things, published in IEEE Internet Computing.
10. MARQUARDT, Katrin, (2017), Smart services – characteristics, challenges, opportunities and, DOI: 10.1515/picbe-0084.
11. Nunes, M. Lopes, Pereira, A.C., Alves, A.C., (2017), Manufacturing Engineering Society International Conference, MESIC. Procedia Manufacturing, (09).035.
12. Pardo, C., Ivens, B. S., Pagani, M., (2020), Are products striking back? The rise of smart products in business markets, published by Elsevier. This manuscript is made available under the CC BY NC user license.
13. Porter, M., Heppelmann, J. E. (2015), How Smart, Connected Products, Are Transforming Companies, FOR ARTICLE REPRINTS, 617.
14. Probst, Laurent, Monfardini, Erica, Frideres, Laurent, Cedola Daniela, Luxembourg, PwC, Business Innovation Observatory, Smart construction products and processes.
15. Raff, S., W., D., and Obwegeser, N., (2020), Smart Products: Conceptual Review, Synthesis, and Research Directions, J PROD INNOV MANAG, DOI: 10.1111/jpim.12544.
16. Rauch, E., Dallasega, Patrick, M., Dominik T., (2016), The way from Lean Product Development (LPD) to Smart Product Development (SPD), Procedia CIRP 50.
17. Schmidt, C. & Manley, M., (2020), Trust in smart city systems Characteristics, and Key Considerations.
18. Schuh, G., Boos, W., Holst, L., Moser, B., (2023), Design Principles For The Organization Of Sales Of Smart Product Service Systems, CONFERENCE ON PRODUCTION SYSTEMS AND LOGISTICS CPSL.
19. Singh, R. K., Nasir, M., (2024), Analyzing The easiness Factors Of The Industries For Implementation Of Industry 4.0 In Production Planning And Control, Educational Administration: Theory and Practice, ISSN:2148-2403.
20. Tumino, A., Bernardi, G. E. De, (2017) Smart Home ecosystems: a model to identify value creation and strategic approaches.
21. Ursula, Ryciuk, (2018), Understanding the concept of smart supply chain, Prague, Czech Republic, EU.
22. VALENCIA, A., MUGGE, R., Jan, P.L., S., and Hendrik, N.J., (2014), Challenges in the design of Smart Product--Service Systems (PSSs): Experiences from Practitioners, 19th DMI: Academic Design Management Conference
23. Wißmann, C., S., (2020), Key Determinants for the Slow Pace of Smart Home Adoption: A Study of Digital Consumer Insights.
24. Ying, Ge, Zonghua, Li, (2020), Application and Development of Smart Pension Products in China, Advances in Social Science, Education and Humanities Research, volume 466.

- 
25. Horváth, Imre,( 2021), Connectors of smart design and smart systems, Delft University of Technology, DOI,10.1017.
  26. Tomiyama, Tetsuo, Lutters, Eric, Stark, Rainer, Abramovici, Michael,(2019), Published by Elsevier Ltd on behalf of CIRP. 0007-8506.
  27. Yevgeni, P., Daniel, H, Christian, S, ( 2023), REQUIREMENTS FOR A SMART PRODUCT-SERVICE SYSTEM DEVELOPMENT FRAMEWORK, INTERNATIONAL CONFERENCE ON NGINEERING DESIGN, ICED23.