

FRAMEWORK TO UNDERSTAND TRAINING AND EDUCATION NEEDS UNDER OPEN AND DISTANCE LEARNING SYSTEM

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Abstract

The Open and Distance Learning (ODL) system fulfills diversified academic and training needs and ensures the sustainment of livelihood while learning. It is crucial for planners of distance education to accurately understand emerging education/training needs of individual prospective learners. Understanding of education and training needs of heterogeneous society with diversified socio-economic background is a challenging task under the ODL System as academic/training needs are highly dynamic and institutions have less direct access to geographically dispersed clientele groups. This paper proposes a framework to understand academic and training needs of individual prospective learners of diversified nature through the "Persona approach". The Persona approach is relevant when planners have limited access to a small segment of prospective learners whose academic/training needs are very dynamic. Needs-assessment study based on the Persona approach is capable of capturing knowledge/training needs of diversified clientele groups. The persona approach consistently monitors dynamics of changes in academic/training needs which helps in periodic revision /updating of courses. The proposed framework based on persona approach would help teachers/administrators of ODL system to design and deliver continuing education courses by keeping the curriculum relevant to academic/training requirements of prospective learners and customize delivery mechanism which would be convenient to their daily schedule and preferences of learners, and will ensure better chances of survival of academic programs with high enrolment, and retention rate. The study adopted multi-channel exploratory qualitative research approach, which consists of review of literature, descriptive materials, critical analysis of relevant documents and field notes documenting framework/procedure for understanding life-long education/training needs of adult learners.

Keywords: Persona development, Persona Use, Open and Distance Learning, Academic Needs-Assessment, Training Needs-Assessment

INTRODUCTION

The Open and Distance Learning (ODL) system in Asian nations has witnessed remarkable growth in terms of enrollment, nature of academic programs and geographically scattered learner support network. It has become a popular economical tool for imparting higher and continuing education at mass scale in these nations. The ODL system has enabled deprived and disadvantaged segments of society to acquire higher education, update their knowledge/skills to become an integral component of the main stream of development. The ODL system in India contributes 11.1% in the Gross Enrolment Ratio (GER) in the higher education, and plays a significant role in achieving the government's mandate of universalization of higher education (AISHE, 2019-20). The ODL system becomes a pertinent agenda for the political class for bringing desired socio-economic engineering of society.

The fourth industrial revolution is gradually diminishing and globalization, free economy and IT revolutions are influencing the job market. The workforce needs to acquire multi skills to sustain in the ever-changing world. There is pressure on higher education institutions to design innovative interdisciplinary academic programs to meet emerging academic and training needs of society as a sustainable measure. Learning objectives of academic programs needs to accommodate dynamic changes in demands of job market and delivery of learning needs to be fitted in preferences and conveniences of prospective learners. The ODL system can achieve it by adapting innovative approaches for conducting needs-assessment study and thereby monitoring changes in needs and preferences of prospective learners.

The delivery of learning under the ODL system is primarily mediated through ICT. The extent of utilization of ICT blended support services in delivery of learning in the South East Asian nations differ with nature of academic programs and profile of learners. For example, most of the learners in professional courses are employed and competent in using internet and web in professional and social life. While learners enrolled in non-professional generic courses in the disciplines of Arts, Social Science and Humanities especially those who reside in remote rural areas still have poor exposure to internet and web, and these learners still prefer to get learning through traditional delivery approach based on printed instructional materials. The ODL institutions adapt versatile design and delivery approach in different academic programs to accommodate such differences, and hence designers of academic programs must have a good understanding of background of prospective learners, academic/training needs of society and demands in the job market in the initial stage of design and development of courses.

The planning of an academic program under the ODL system is initiated with assessment of academic and training needs of prospective learners. The word 'needs-assessment' is defined as systematic approach for setting priorities for future action (Watkins and West, 2012). Lakshminarayanan et al. (2016) define needs-assessment in education environment as a process of accessing gaps in the existing knowledge/training, anticipated outcomes of courses, strengths, and weaknesses of education mode, which enable effective delivery of learning. Mukhlisin (2018) noted that the purpose of conducting needs-assessment is to understand the existing need for knowledge/skills, achievements, interests, and motivation of the target group. The needs-assessment study in the ODL context aims in identifying gaps in the current and required levels of education and training needs of society. Needs-assessment study in the education sector also highlights profile of prospective learners, expected enrollment, convenience, expectations and preferences of prospective learners. Needs-assessment in the education sector is a multidimensional term with vast scope and institutions have frequently used alternative terms for needs-assessment such as gap analysis, needs analysis and performances analysis (Watkins et al., 2012).

Bansal (2013) endorsed the importance of needs-assessment study in avoiding wastage of resources at the later stage, which can be dropped in the early stages of design of academic program. The review of relevant literature revealed that despite the importance and relevance of needs-assessment studies in education system for its economic survival and reputation; methodologies and procedures for conducting needs-assessment studies in the education sector is not given adequate coverage in research

publications. Therefore, needs-assessment studies in the education sector remained unstructured and individualized. Traditional approaches of needs-assessment studies under the ODL system such as survey, brainstorming, experts' meetings etc. have limited scope in understanding individual and diversified education/training needs and there is always a threat for the survival of academic programs in the absence of a reliable approach for conducting needs-assessment study. The scope of existing practices of needs-assessment studies under the ODL system is confined to understand generic academic/training needs in the discipline. Outcomes of such studies fail to address the genuine demand of prospective learners and are usually influenced by supply side of institution and mainly driven by mere thoughts of teachers and experts involved in designing of the academic programs. Ferreira and Abbad (2013) cautioned that existing practices of needs-assessment studies could not accurately assess academic requirements of prospective learners. Chaehan and Jaewoo (2017) criticized the traditional approach of understanding academic/training needs as they primarily focus on demographic features of prospective learners. Traditional approaches of needs-assessment have little scope for adaptation of innovations in the curriculum and delivery of course to fit individual's schedule, preferences and demand of knowledge/training. The adaptations of innovation in design and delivery of the curriculum in the absence of adequate guidance from literature remain risky and raise doubt, whether innovation integrated into design and delivery of courses would be acceptable to a large section of prospective learners. This uncertainty can be minimized by applying Persona approach in needs-assessment study in the education sector. Personas are archetypical descriptions of prospective users highlighting their demand for a specific product (Cooper et al, 2014). Chaehan and Jaewoo (2017) acknowledged the importance of persona approach for adding new dimensions and explaining education/training needs in better ways.

Whenever a new academic program is under development, the developer team must have in their mind the required knowledge/training needs and learning preferences of invisible prospective learners with stereotype characters, which influence the curriculum and delivery approach of academic program. These invisible stereos typed prospective learners are the creation of individuals' minds in an unscientific manner and usually may be inaccurate in expressing real needs of prospective learners (Duncan and Shamal, 2017). Persona approach is a scientific mean to define and document those invisible prospective learners on paper in a structured manner, thus helps in the documentation of tactics knowledge about prospective learners for convenient and easy sharing of it with other team members in a structured manner (Cooper et al 2014). The present study highlights thematic and pragmatic aspects of inclusion of persona approach in needs-assessment study for better understating of emerging education/training needs under the ODL system. The paper further elaborates on the procedure of validation and integration of persona approach in designing of curriculum and delivering of academic programs. This study is valuable for administrators and teachers of ODL system in adapting persona approach for a better understanding of academic/training needs and learning preferences of prospective learners.

Persona is a popular technique in the marketing management discipline conceptualized in mid 1980s by Cooper Alien. It is frequently applied for understanding the demands and expectations of customers for new products although Persona approach has been lesser known beyond marketing management. Persona approach is goal-directed design and user centered approach. Cooper Alien defines persona as:

"Personas provide us with a precise way of thinking and communicating about how groups of users behave, how they think, what they want to accomplish, and why. Personas are not real people, but they are assembled from the behaviors and motivations of the many actual users we encounter in our research. In other words, personas are composite archetypes based on behavior patterns uncovered during our research, which we formalize for informing the product design. By using personas, we can develop an understanding of our users' goals in specific contexts—critical tool for ideating and validating design concepts."

(Cooper et al, 2014)

Persona method in the education sector involves understanding of needs and expectations of prospective learners through a fictional character, who is the true representative of prospective learners in the academic program under development. This fictional character is known as Persona. A persona in the education sector has well defined demographic features. It belongs to specific socio-economic groups with precise academic and professional backgrounds. This fictional character stimulates and generates innovative ideas for improving design and delivery of academic programs according to daily schedule and preference of persona apart from explaining academic/training needs of prospective learners. The persona approach can adapt to accommodate the dynamic changes in the needs of learners while academic program is still under development.

CONTEXT

Indira Gandhi National Open University (IGNOU) has been offering 257 academic programs at Research, Master, Bachelor, Diploma, Certificate and Awareness levels through its 21 School of Studies with the help of widely scattered Learner Supports network consists of 67 Regional Centers, 3656 Study Centers spread across the nation and 22 overseas study centre in 14 nations (IGNOU¹ Annual Report 2019-20). There are over 3.3 million adult learners in the university. Adult learners expect that curriculum can be in modular form as per knowledge/training demand of their profession and delivery of learning needs to fit in their daily schedule and preference. The flexibility in contents and delivery has been improved with the integration of ICT in multi-media blended learning. Modularity in the curriculum allows multiple entry and exit points to meet individual needs.

Design and development of an academic program under the ODL system is a time consuming and expensive exercise. For example, Course designer team at IGNOU usually takes about two years in developing a certificate level academic program of six months duration, hence proper planning is crucial for timely and economically developed of academic program. The university conducts needs-assessment study in the initial stage of design of academic program so that it can meet the requirements of the job market and attain good enrolment. Course designers have acquired multi-dimensions approach in conducting of needs-assessment study to understand academic and training needs of individuals, society and labor market.

An internal report on academic evaluation of the university's academic programs in 2020 revealed that about 200 out of 257 academic programs on offer at IGNOU have low enrolment even though needs-assessment studies conducting during conceptual stage of all these academic programs had predicted good enrolment (IGNOU, 2020). It expresses severe limitations of existing procedures for needs-assessment and insists on cross validation of outcomes of the needs-assessment study with alternative resources. The university is in continuous search of a dynamic needs-assessment approach, which can suggest appropriate changes in curriculum and delivery of programs at the earliest with changing needs and preferences of learners.

REVIEW OF LITERATURE

Review of literature is segmented into three sub-sections i.e. a) importance of needs-assessment study in education sector, b) strengths and limitations of various methodologies being practiced for understanding academic/training needs and c) persona-based needs-assessment methodology.

a) Importance of needs-assessment study in education sector

Nuissl (2010) noted poor outcomes of adult education programs due to lack of understanding of educational needs of individuals. Burke and Doolan (2008) noted that vocational training programs for adults were failed to retain them for long as these programs ignored their training needs, preferred learning styles and convenience regarding timing and venue of training, and the study further claimed

that academic programs would retain adult learners only when curriculum and delivery approach strategically fits in personal and professional life of individual learners.

Bansal (2013) emphasized that needs-assessment study at the initial stage of design enables course designers to assess actual needs and economic survival of academic program in terms of good enrolment. The report of Department for Education, UK (2010) acknowledged the importance of needs-assessment study in strengthening academic programs, however this study cautioned against too much dependence on needs-assessment study; care must be taken to prevent needs-assessment study becoming a straitjacket. Ferreira and Abbad (2013) cautioned that needs-assessment studies in education sector are lacking contextual factors, as these are driven by supply side of institution.

b) Strengths and limitations of various methodologies are practiced for understanding academic/training needs

The understanding of education/training needs through exploratory meetings with subject experts, teachers and professionals from the relevant fields is very popular at IGNOU. This approach is principally based on the idea that these experts have up-to-date knowledge on theoretical and applications aspects of the discipline; experts are highly competent in defining education/training needs in a better way than prospective learners, who might have limited field exposure and knowledge about new developments and emerging scenarios (Chou et. al. 2020). It is a qualitative approach that aims at obtaining in-depth details through close deliberation with in a small group of experts, hence inquiry methodology remains open ended; allowing participants to raise issues that matter most thus participants have better control on data (Choy, 2014). Nancy and Don (2015) remarked that distance and time are major constraints for experts to participate in meetings. This approach is expensive due to high cost of stay and travel of experts; however, outcomes are prompt. Traveling is almost impractical in the COVID scenario, web conferencing can solve this problem; experts can participate in meetings without assembling at one place. Baker and Edwards (2012) apprehended that opinion of experts group may not be the true representative of the target group; there is a tendency of eliminating extreme positions to reach a consensus within the team in making group decisions and consensus decisions are often going to be the middle of the road. Results of exploratory meetings could not be objectively verifiable (ACAPS, 2012). Bogner and Menz (2009) raised doubt about research values of deliberation with experts, whether interview with experts can be placed on a secure methodology footing, as this approach suffers from diminishing returns; as the essence of deliberations with experts is caught in the first few meetings, later it is difficult to generate ideas, in subsequent meetings (Chaehan and Jaewoo 2017).

Needs-assessment study based on survey approach is a quantitative methodology. Prospective learners, their employers, existing learners enrolled in similar academic programs are parts of the target group for the survey for understanding academic/training needs. Liker and Ogunjesa (2019), Marco et al. (2017) noted that the key challenges in survey methodology are ensuring the representativeness of samples, surveying adequate populations, stimulating their participation thus success of survey-based needs-assessment study depends on careful selection of inclusive sample and suitable questionnaire. Tools for survey should be brief, simple and self-explained; it should also ensure adequate coverage to all important aspects of needs to be covered through needs-assessment study (Pramodet al, 2016). The quantitative outcomes of survey-based needs-assessment studies are driven by opinions of the majority of respondents. Opinions of individuals could not be highlighted in survey-based approach until these ideas are endorsed by statistically significant numbers of respondents (Anthony et al., 2009). The survey methodology also failed to collect in-depth qualitative details about education/training needs of individuals. Nasia et al. (2016) criticized survey research methodology as being expensive and time consuming however authors made suggestions to cut down cost of conducting survey by using alternative approaches of inducting survey. Rumble et al. (2018) highlighted limitations of survey methodology in understanding needs in emerging areas; there are chances that a major segment of sample may not sense importance and affiliation with emerging issues being addressed in survey. Jing (2017) criticized survey methodology

as researchers usually like to seek opinions from users who are alike him/her, so feedback in survey tends to be biased, it is driven by the ideology of researchers. Liker and Ogunjesa (2019) cautioned against representation and measurement errors in survey-based research study.

Needs-assessment studies based on secondary data is conducted in short time and found economical (ACAPS, 2014). National/ international academic, research and regulatory authorities periodically publish reports on education and training needs in specific sectors/trades, particular geographical areas/nations as per its mandate. These reports are worth as they reflect on the holistic scenario, scope, strengths, and weaknesses in specific vocations/ sectors at national and international levels. It is beyond the capacity of individual institutions/teachers to comprehend the entire scenario as being done by the regulatory bodies having access and control over data/information required for stipulating education/training needs in a specific sector. Teachers can easily assess academic/training needs by auditing such reports (Ahmed, 2010).

IGNOU realized education/training needs in the disciplines of teacher education/ health/child care by auditing reports of government/regulatory authorities and introduced new academic programs to meet these requirements. The strengths of secondary data in needs-assessment study are quickness, accuracy, economy, and ready to use authentic reports (ACAPS, 2014). Compliance of the reports of ministries/regulatory bodies also contributes in achieving government/social mandate and targets sets by the regulatory authority and government. Pruitt and Tamara (2006) shared practical limitations in using secondary reports for understanding education/training needs as these reports are often cumbersome, tedious, and lose relevance with time. The scope of the needs-assessment study based on secondary data is further delimited by the generic nature of outcomes of reports; most of these reports focus on achieving education/training needs by delivering education through traditional classroom teaching (Judith and Mary, 2018). Teachers in the ODL system need to be careful in adapting reports on assessing education/training needs through classroom teaching. These reports need to be rescaled and adapted according to the pedagogy of the ODL system by bringing appropriate changes in clientele, knowledge/training needs, and strategy for delivery of learning.

The feedback and experience of learners in similar academic programs can act as a baseline document in understanding emerging education/training needs; it becomes foundation in conceptualizing a new academic program at advanced level in the same discipline (Alex et al, 2020). IGNOU sends a feedback sheet to its learners. Feedback is periodically summarized and analyzed; it becomes a base document in understanding education/training needs at the advanced level thus the university can understand demands for the advanced level courses without adding any cost and time in conducting needs-assessment study. This approach is delimited by the context of getting feedback. Learners provide feedback on the quality of instructional materials and support services availed by them rather expressing demands and willingness to join advanced level education.

The review of literature revealed that every approach of needs-assessment study under the ODL system has certain strengths and limitations; hence teachers prefer to apply multi-dimensional approach for conducting needs-assessment study to overcome weakness of complementary approaches of needs-assessment. The multidimensional approaches produce synergetic effects and help in validating findings of alternative methods of needs-assessment however acquisition of multi-dimensional approach is time consuming and expensive affair so researchers need to draw a balance in the extent of accuracy and risk of errors in findings of needs-assessment studies so that needs-assessment study can be managed within available time and funds. Gorard (2012) recommended that each needs-assessment study must highlight limitations of research methodologies used in analysis so that readers take necessary cautions while acquiring outcomes of report in design and delivery of new courses.

c) Persona methodology

Cooper et al (2014) stressed that complex phenomena of needs-assessment can be easily abstract with the help of persona approach. It also provides a common language for deliberation and exchange of information among members of designer team on customers' expectations with product. McDonagh and Thomas (2010) termed Persona approach as empathic design strategies which enable developer team to communicate needs of users in a better way. Hansen and Nielsen (2017) stated that persona approach would help designer in understanding needs and behavior of primary users. Cooper et al (2014) advocated that needs-assessment study based on persona approach should be conceptualized in staged manner, which comprises of two major steps (a) conceptualize and strengthen persona to keep it close to reality and (b) integrate persona in designing of product. Hansen and Nielsen (2017) argued that a persona never means a single user rather it represents mash-up of groups of users. Cooper et al. (2014) stated that persona approach can be applied for designing product for small as well as large clientele groups. Wang (2014) acknowledged strengths of persona in revealing detailed information about users and argued that persona is real and easy to remember. Kouprie and Visser (2009) advised that persona approach is effective in ideation, prototyping and testing phases of a new product. Cooper et al (2014) cautioned that persona never means a complete and accurate solution, and they advised that persona is a preliminary tool help in explaining requirements/needs of customer, which needs to be investigated and validated further with other approaches are being used in needs-assessment. Yström et al (2010) applied persona approach in explaining academic/training needs of undergraduate learners in electrical engineering, computer science engineering and software engineering by mapping the current roles of engineers in these disciplines into future.

OBJECTIVES OF THE STUDY

The objectives of the study are:

- a) To list strengths and weaknesses of needs-assessment methodologies which are being practiced for understanding education/training needs of society and job market and
- b) To design a conceptual framework for needs-assessment study principally based on Persona approach.

RESEARCH DESIGN

The ODL system is based on learner centered approach, hence meeting of academic/training needs of individuals in the diversified learners' group is a challenging task. The applications of persona approach in understanding academic/training needs of society and job market is a new concept in the ODL sector, therefore researchers adopted an exploratory research approach. The exploratory qualitative research methodology is the most appropriate in scenarios yet to be explored and explained. The study applied multi-channel exploratory qualitative research that consists of review of literature, descriptive materials, critical analysis of relevant documents and field notes documenting applications of persona approach in understanding of demand of new products, liking and disliking of prospective buyers.

STRENGTHS AND WEAKNESSES OF NEEDS-ASSESSMENT METHODOLOGIES

Assessment of demand of proposed academic programme by industries and society is an integral component of design and development of academic programme. Strengths and weaknesses of methodologies frequently adapted under the ODL system have been extensively covered in critical review of literature. The same is summarized in the following table.

Table 1. Strengths and weaknesses of methodologies of needs-assessment

Methodologies for needs-assessment	Strength	Weakness
Expert meeting	<p>Qualitative approach aims at obtaining in-depth details as inquiry methodology is open ended</p> <p>Experts have up-to-date knowledge and highly competent in defining education/training needs</p> <p>Immediate results</p>	<p>Experts groups are not true representative of prospective learners</p> <p>High cost of stay and travel of experts; traveling is also time consuming</p> <p>Outcomes are based on consensus decisions very often going to be the middle of the road</p> <p>Results of exploratory meetings could not be objectively verifiable</p> <p>Essence of deliberations with experts is caught in first few meetings, later it is difficult to generate new ideas</p>
Survey	<p>True representation of prospective learners with careful selection of population for inducting survey</p> <p>Quantitative research methodology, obtain opinion of large group</p> <p>Easy to validate outcome with statistical techniques and survey conducted earlier</p> <p>Cost effective</p>	<p>Time consuming</p> <p>No way to understand opinion of those who are not interested in survey; researcher cannot stimulate part participation</p> <p>Nobody to clear doubts when target fails to understand some questions</p> <p>Inflexible and inquiry methodology is close ended In-depth details are not obtained.</p> <p>Limited scope in understating training/education need in emerging areas</p> <p>Outcomes is driven by opinions of majority of respondents (statistically significant), there is always threat of ignoring valuable opinions of individuals</p> <p>Designing of instrument for survey is a challenging task; researcher could not bring any change in enquiry questions once instrument is inducted.</p>
Secondary data	<p>National/ international academic, research and regulatory authorities periodically publish reports on education and training needs in specific sectors/trades, these reports are readily available on internet</p> <p>Conducted in short time and economical</p> <p>Provide holistic prospective of demand of education/training at international/national level</p>	<p>Reports are often cumbersome, tedious, and loss relevance with time</p> <p>Education/training needs and delivery of learning needs to be adapted according to pedagogy of ODL system</p> <p>Absence of direct tangible outputs</p>

Feedback from students enrolled in similar programs	Feedback and experience of learners in similar academic programs can act as a baseline document in understanding emerging education/training needs Blend of Quantitative and qualitative methodologies Involve no cost as institutional obtains feedback from students on regular basis	It becomes secondary data for understanding demand of new academic program; hence suffer from context of obtaining feedback; students express opinion quality of instructional materials and delivery mechanism rather on emerging demand of education/training in that discipline.
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FRAMEWORK FOR NEEDS-ASSESSMENT STUDY BASED ON PERSONA APPROACH

The principle of Andragogy advocates for learner centered approach to retain interests of adult learners. Adult learner joins continuing education program with specific objectives; therefore, detailed understanding of needs, preferences, personal, social, and professional life of prospective adult learners is a must in the initial phase of designing of academic programs. Integration of Persona approach in the needs-assessment study can support this endures. The developer team creates a set of personas and maps their learning behaviors, needs and preferences in the curriculum and delivery of program. Cooper et al. (2014) contemplated that Persona is fiction character, although features, characters and functional objectives of Persona is not like an alien or superhero; it is inspired from actual characters and educational needs of prospective learners. Life is induced in persona by assigning a photo, name, gender and age.

The description of persona is object oriented, which narrates users' behavior, social, economic, vocational, and educational background, perceptions, liking and disliking for specific products in specific contexts. Thus, persona approach can capture educational and career aspirations of individual in specific socio-economic contexts. It also helps in identifying popular means of social/personal communication among prospective learners which can be conveniently used in delivery of learning and peer interaction under ODL. Faily and Fléchais (2010) highlighted that Persona besides explaining needs for the specific product, also provides valuable information about threats, vulnerabilities and likely areas of risk in launching of new product in given environment. In education sector, a persona portrays prospective learners, who join the course with specific learning/training objectives. Persona of prospective learner also highlights how daily routines in their life create hurdles in getting education. It also explains difficulties and challenges which would be encountered by persona while pursuing academic programs, which need to be resolved by persona or institution for successful completion of the academic program.

Persona approach is dynamic; there are frequent changes in profile, preference, and goals of persona during development and delivery of the course. Hence, persona needs to be closely monitored while designing academic programs. Dynamic changes in persona demand corresponding mapping in curriculum and delivery approach, until persona become stable and well-integrated in the design of academic programs. Course designers need to be cautious in defining persona; it is not simply picking up profile of prospective learner and adding fiction name and photo to transform it into persona. Such an approach of defining persona would never result in productive outcomes. The defining of persona demands extensive research; it is defined in a phased manner. Pruitt and Tamara (2006) defined five phases in the lifecycle of persona (Pruitt and Tomara, 2006, p. 2):

"Family planning: Before you begin any persona effort, you should figure out what problems you're trying to solve and what materials (specifically, data sources) are already available for you to use.

Conception and gestation: Organize assumptions; turn data into information and information into personas.

Birth and maturation: Create a persona campaign and introduce the personas to your organization.

Adulthood: Use the personas in specific ways to help during the design, development, evaluation, and release of your product.

Lifetime achievement and retirement: Measure the success of the persona effort and create a plan to reuse or retire the personas."

There is a misconception that Persona represents a single learner. Cooper et al (2014) cleared this misconception by referring persona as composite users' archetypes because personas are in a sense, composites assembled by grouping related usage patterns observed across individuals in similar roles. A persona may enjoy the common features of two or more groups of prospective learners.

In case prospective learners are diversified and comprised of several clusters and each cluster is characterized with distinctive features and education/training needs, a separate persona needs to be defined for each cluster having exclusive education/training needs and domains of features influencing admission and studying in the course. Accommodating education needs of each persona (cluster) in curriculum would result in additional study loads on rest of personas; it results in every learner would have lot of undesired contents in curriculum. A cumbersome curriculum would be rejected by the most of prospective learners. The designing of such a cumbersome course is time consuming and economically unviable for institutions. Education planners carefully set a balance in accommodating education/training needs of all the personas representing prospective learners in the curriculum by setting priority and assigning weight-age to needs and preferences of each persona as per its perceived strength in the admission.

Table 2. Weightage of Primary, Secondary and Supplementary Personas

Learning and training needs and delivery preferences	Persona 1 (Primary)	Persona 2 (Primary)	Persona 3 (Secondary)	Persona 4 (Supplementary)	Weighted Value
Expected enrolment	400	400	200	100	1100
Weight	.4	.4	.2	.1	-1.1 to 2.2
Needs 1	0	0	2	1	0.5
Needs 2	-1	0	2	1	0.1
Needs 3	2	1	-1	2	1.2
Delivery style 1	1	0	2	1	0.9
Delivery Style 2	1	2	-1	0	1.0
Delivery Style 3	2	2	-1	2	1.6

-1 Persona dislikes this feature; it acts as constraints in joining program

0 Persona ignore this feature addition of it will only increase study load without any encouragement to learners

1 Persona somewhat like this feature

2 Persona strongly endorsed this feature

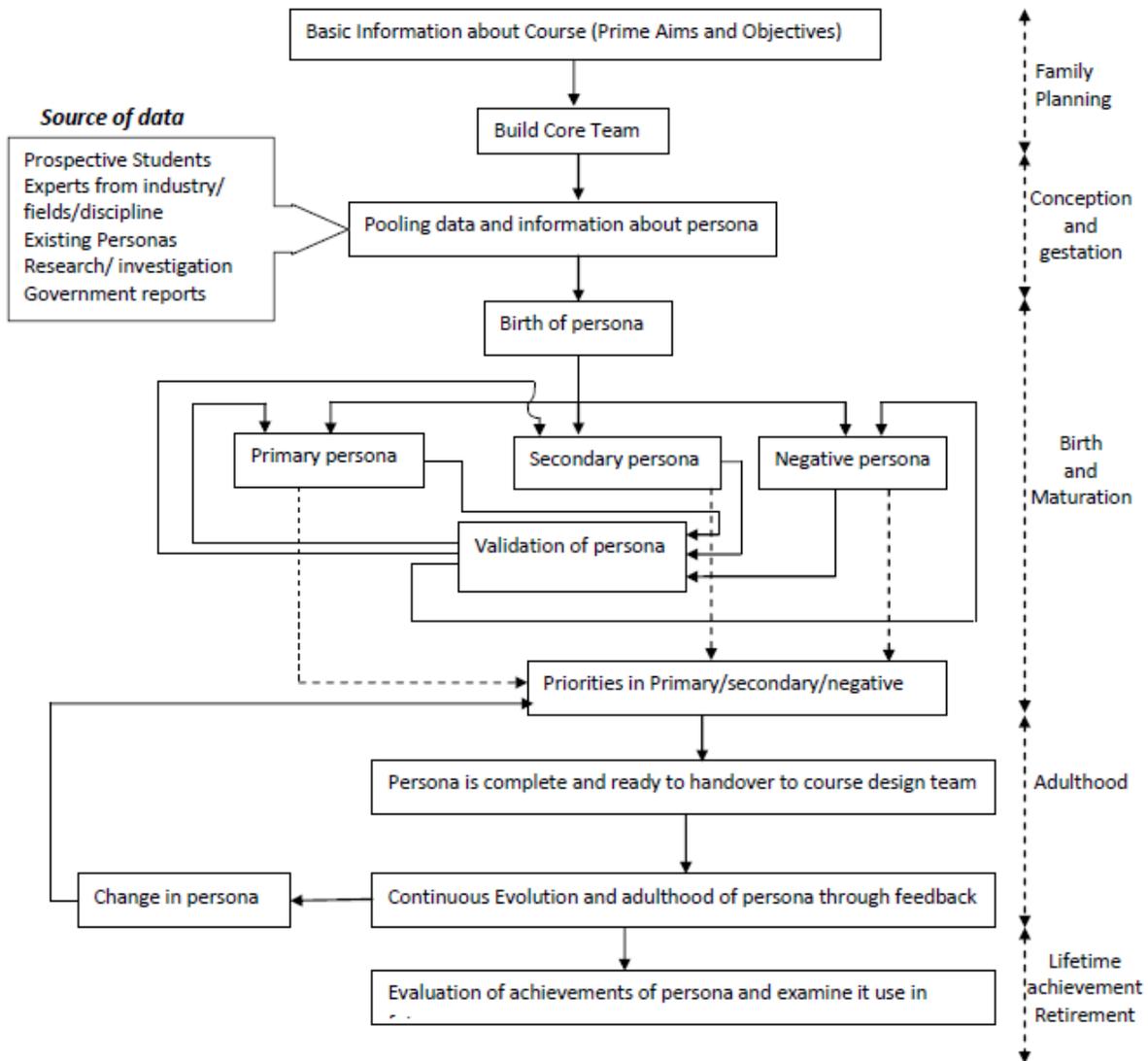
Cooper et al. (2014) suggested a solution for accommodating more than one persona in designing of new products. There will always be a primary persona representing the largest clientele group and rest of personas will be classified either as secondary persona, supplementary persona, and customer persona,

served persona or negative persona. Secondary persona does not share goals with primary persona so it has exclusive goals. Learners who belong to secondary person would not join the proposed academic program until it addresses their education and training needs. So, inclusion of needs of secondary persona in the curriculum depends on perceived admission strength of prospective learners represented by the secondary persona. Needs and preferences of secondary persona are considered only when these ensure high enrolment and become vital for the economic survival of the program. The Academic institution plays a vital role in social engineering. Hence it should not ignore social losses caused by dropping education needs of secondary persona. Cooper et. al. (2014) further explained that Customer Persona explains needs of customer not end user. It can be treated as secondary persona. Similarly Served personas are not direct users of the product but are directly affected by the use of the product can be treated like Secondary Persona. Family and employers of prospective learners are served persona; thus, needs and expectation of server persona with new academic programs are almost alike to needs of prospective learners.

Supplementary persona shares common education and training needs with primary and secondary personas, so their demands are automatically covered with inclusion of education needs of primary and secondary personas in the academic program. The fulfillment of education needs of supplementary persona improves chances of high enrolment without adding study load in curriculum. A negative persona represents excluded group. Education and training need of learners belonging to negative persona could not be covered in the proposed program, thereby narrow down population of prospective learners; consolidating curriculum and learning delivery strategy by rejecting needs of negative persona. This step helps the course designer team in focusing on education needs of confined groups of learners. Needs and expectations of all personas (primary, secondary, customer, served and supplementary) are merged into a single domain while structuring curriculum and delivery mechanism of proposed academic programs. Each persona is assigned priority and weightage in prototype curriculum as per its perceived strength in enrolment. Social and economic relevance of the segment of society represented by the person shall also be kept in mind while dropping needs of that persona. Course designers can accommodate additional education needs of prominent secondary persona without adding unwanted study load on other persona by offering optional courses so that curriculum can be customized as per needs of individuals. Cooper et al (2014) recommended that planners can easily manage and control the design with at most three personas, otherwise inclusion of needs of all the personas will lead to curriculum which is unfocused, cumbersome, time consuming and expensive. Customer persona and Served persona can be treated as secondary persona in the proposed framework to keep curriculum and delivery of academic programs focused and uncomplicated, thus managing of prototype is convenient and time saving by minimizing numbers of persona as suggested by persona. The behavior and needs of persona change frequently in the initial phase of life of persona. Designers of courses face difficulties in accommodating these changes in curriculum. The finalization of curriculum is delayed until there is certain stability in persona.

The behavior and preference of persona up to certain extent is influenced by ideas of designer. This interference of designer in persona may drift it away from prospective learners. Cooper et al. (2014) referred such persona as self-referential design. The ODL system has poor direct access to prospective learners so there are great chances of self-referential design. Self-referential design can be avoided by engaging team in design of persona rather doing it alone. The assumptions and beliefs of the team about persona are scientifically tested through extensive research, secondary data, survey and interview of prospective learners and resulted persona is once again validated with alternative approaches of needs-assessment to eliminate self-referential design in persona. The chances of self-referential persona can be minimized when design of persona is data driven based on extensive scientific data collected about prospective learners. Planner may involve two to three volunteers in the design team, who are true representatives of prospective learners for a better understanding of academic/training needs, preferences and convenience of prospective learners. The participation of volunteers in the design team shall be at very early stage of planning. The alternative sources for obtaining details about the persona include learners enrolled in similar academic programs at other universities and ideas of other colleagues

in development team (Ystrom et al, 2010). The outcomes of persona approach can be validated by drawing a direct link between outcomes of persona with relevant evidences from the fields. Kell et al (2015) recommended cognitive walk-through approaches for validation of outcomes of persona, whereby researchers question herself/himself whether persona with specific features, preferences and functional objectives likely to be in enrolled in proposed program; what delivery features of course would become constraints in retaining learners in the proposed academic programs. The developer team should check completeness and redundancy in persona and draw its parity with process of design of academic program at regular interval so that academic program remains relevant to changing needs of clientele group while it is under development and development remains under control of institutions.



Note: Secondary persona also includes customer persona and served persona to minimize the complexity in design and précised curriculum addressing need of specific prospective learners

Figure 1. Framework for Needs-assessments based on Persona

LIMITATION

Needs-assessment study based on persona approach highlights needs and preferences of prospective learners in specific context, so findings of persona-based needs-assessment study cannot be generalized

and applied for other academic programs. The persona approach does not provide concrete and conclusive decision about curriculum and delivery approach of proposed academic programs. Each learner enrolled in specific program may not be alike persona conceived at the designing stage, although persona is representative of a large segment of prospective learners. Risks involved in Persona approach can be minimized through cross validations of outcomes; still designer team should workout rescue plan to minimize damage, in case actual operations would drift away from targets set by persona.

SUMMARY

Understanding of academic and training needs of society and job market is a crucial phase in designing of academic programs for its long-term economic viability with high enrolment, it also ensures high retention rates by realizing needs and interests of adult learners, hence course designers under the ODL system apply multi-channels research methodology for better understanding of education/training needs of prospective learners in the initial stage of design of academic program.

The needs-assessment study based on persona approach can capture precise academic/training needs of prospective learners. Data mining techniques, and high scale computing machine make it feasible to analyze a large volume of data and information to conceptualize a data driven persona explaining academic/professional/social profile, preferences and education/training needs of prospective learners. Application of data mining technique in defining Persona never means a bombshell of large volume of data and information; course designer wisely define persona so that it is not overloaded with unnecessary information and easily understandable to each member of development team.

The suggested framework in this paper, instruments persona for conducting needs-assessment study under the ODL System, it helps teachers/administrator in understanding features, likeness and education/training needs of prospective learners. The framework is kept generic just outlines major steps involved in designing of persona so that minute details in the procedure can be easily contextualized.

Persona is designed in team approach to minimize adverse impact of self-referential design, thus the effectiveness of persona approach depends on competency and efforts of planners team in conceptualizing a persona by keeping it close to aspirations of the target population and avoiding self-referential design.

A persona is meaningful only when it fits in the mandate of the university, design of academic program is principled on pedagogy of the ODL system and delivery of course remains within administrative, academic, finance and infrastructure boundaries of the institution. Course designers should keep in mind limitations of persona approach while integrating persona in design of course because persona never means complete and accurate solution to academic/training requirements of prospective learners, thus persona needs to be strengthened and validated with other approaches of needs-assessment studies, domain experts and secondary resources.

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