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HYYTINEN (Kirsi), TOIVONEN (Marja), « Le renouveau de l'enseignement pré-primaire comme exemple de service centré sur l'utilisateur et d'intégration des ressources dans le secteur public »

RÉSUMÉ – Cet article est consacré à l'analyse d'un projet pilote d'éducation intégrative mené en Finlande. Ce projet a consisté à encourager les initiatives d'enfants d'âge préscolaire (dans le domaine de la création de leur propre jeu) et à élargir les environnements d'apprentissage. L'étude illustre également les opportunités de la numérisation. Appuyée sur l'observation et des entretiens, elle introduit la perspective service, dans un domaine où la plupart des études antérieures relèvent de la recherche pédagogique.

MOTS-CLÉS – Éducation pré-primaire, éducation intégrative, services centrés sur l'utilisateur, services interprofessionnels, intégration de ressources

HYYTINEN (Kirsi), TOIVONEN (Marja), « Renewal of pre-primary education as an example of user-centric services and resource integration in the public sector »

ABSTRACT – This paper analyzes an integrative education pilot carried out in Finland. The pilot encouraged initiatives of preschool children and fostered the broadening of learning environments. As the pilot content was the creation of children's own game, the study also exemplifies the opportunities of digitalization. The research methods were observation and interviews, and the results highlight the service perspective in a field in which most earlier studies have been based on pedagogical research.

KEYWORDS – Pre-primary education, integrative education, user-centric services, cross-professional services, resource integration

# RENEWAL OF PRE-PRIMARY EDUCATION

as an example of user-centric services  
and resource integration in the public sector

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## INTRODUCTION

This study examines new educational practices as an example of interactive services in which the user plays a central role. Our focus is on pre-primary education and our case describes the recent renewal of this education in Finland. The principles in the curriculum emphasize the child's own knowledge, skills and experience, and the aim is to promote his or her initiative, problem solving and acting as a group member. The Finnish National Board for Education prepared the renewal in collaboration with local municipalities, and it was implemented in autumn 2016. In this context, some municipalities also fostered the goal of broader learning environments that can be created through the combination of resources of various public services. In addition, they actively utilized the new possibilities provided by digitalization.

The idea that the learner is the central actor in education has an old origin (Dewey, 1938; Vygotsky, 1978), and it has been broadly applied in different countries. In recent years, the learner-centric view has become

increasingly topical as digitalization has provided new opportunities for knowledge sourcing (Gudmundsdottir and Vasbø, 2014). Instead of 'knowledge transfer', the role of teachers is increasingly seen as an expert advisor and the organizer of learning situations – *i.e.* their central task is to encourage and enable learning. The practical applications of this thinking started from higher education, spread thereafter to schools, and as the newest step have reached preschools (Branscombe *et al.*, 2014).

The background 'philosophy' is (social) constructivism which highlights that the learner forms knowledge constructions as a result of individual processes by relating new knowledge to existing conceptions through personal meanings. Constructivism acknowledges learning as a continuous process in context and highlights that learning can only be achieved through meaningful activity. Learners should identify, pursue and reflect on their own goals while solving the genuine problems in the world. Learning occurs through interaction between the learning material, previous knowledge structures, and thinking. In group situations, children learn together by giving stimuli to each other's thinking and imagination (De Vries *et al.*, 2002). A conclusion based on these characterizations is integrative education, which contrasts subject-bound education and is based on theme-based working. The themes are related to children's life sphere and to contents expanding and structuring their views of the world (Can, 2009). Project work is favored as an efficient way to promote theme-based learning (Branscombe *et al.*, 2014).

Interaction in teaching and the central role of learners have been abundantly studied in pedagogical research, but only rarely from the service perspective. This holds true in the case of young children, in particular. The few examples that have analyzed education as service have concentrated on higher education (*e.g.* Ng and Forbes, 2009). However, also earlier stages of education fulfill the criteria of service and reflect typical challenges of service: benefit provided to the user is the goal and the achievement of this goal requires interaction and input from both the provider and the user. Thus, it would be useful to seek linkages between the theoretical approaches and empirical findings of pedagogical studies and service studies.

In our study, we are especially interested in the role of children as service users whose active participation in the service process is emphasized in integrative education. We argue that this emphasis reflects, not only

a change of pedagogical principles, but also a current trend in service research and practice: the importance of the user behavior is generally seen as a prerequisite for the successful process and outcome of the service. In our theoretical review, we summarize the development towards user-centric views in service research and point out their central topics.

Another gap in the educational studies applying the service perspective has been the restriction to marketed services. Public services play, however, an important role in the field of education. Today, these services experience significant challenges due to scarce and even diminishing resources. A viewpoint that would require profound discussion is the resource implications included in integrative education: it seems apparent that encouraging the active participation of children and organizing the educational interaction on that basis requires new skills and is time consuming. This raises the question about the sufficiency of resources. The broadening learning environments, on the other hand, could provide additional resources but require cross-sectorial and cross-professional working, which is often only beginning in the public sector (Määttä *et al.*, 2014). In the theoretical part of our study, we review the literature on resource integration to examine this issue. The approach of service-dominant logic (S-D logic), among others, considers resource integration to be a core phenomenon in service (Vargo and Lusch, 2016; Wieland *et al.*, 2016).

Our empirical study has been carried out in Vantaa, which is the third biggest city in Finland and situated in the Helsinki metropolitan area. This city has been active in the development of pre-primary education based on the national goals. Its own idea has been to promote the collaboration between preschools and libraries in this context. The city has also promoted and strengthened service-orientation in various sectors: it has applied service design to make visible the path of users, and encouraged citizens to participate in the goal-setting as regards the services targeted to them.

In autumn 2016, three suburban preschools and three libraries in Vantaa participated in an integrative education pilot whose core was the creation of children's own game based on a commonly agreed theme. The libraries in the respective suburbs acted as a material source and a place for gaming. After the pilot, the process was elaborated into a more widely applicable collaboration model. In our study, we followed the pilot via observations and interviews, and participated in the model

development workshops. The study is part of a bigger project that focuses on the development of public services in the digital era ('Service revolution – people to the center in digitalization').

We have structured our paper as follows. In the first section, we present the theoretical backgrounds of our study: the development of user-centricity in services and resource integration as a view that broadens collaboration from the dyad of the service provider and the user to multi-actor contexts. In the second section, we describe the context of our empirical study and the methods of data collection and analysis. The third section summarizes the results. We have divided them into those describing the actual process of the preschool-library collaboration pilot, those describing the experiences of the participants, and those describing the collaboration model that was developed for a broader use on the basis of the pilot. We end our paper with the concluding discussion.

## I. THEORETICAL BACKGROUND

In this section, we aim to show how service research has actually developed to the same direction as the pedagogical discussion: towards the emphasis on the deepening participation of the user. User- or (customer-) centricity is seen beneficial for both everyday service transactions and service innovation (Edvardsson *et al.*, 2007). It has been highlighted both by the service economics and management (Gallouj and Savona, 2009; Sundbo and Toivonen, 2011) and by the service marketing research (Heinonen, 2010), and generally analyzed as a prerequisite for the emergence of service value. Service-dominant logic (Vargo and Lusch, 2004), a particularly popular stream in marketing, considers resource integration central in the value creation activities of both the provider and the user (the beneficiary in the S-D logic terms).

### I.1. THE DEVELOPMENT OF USER-CENTRICITY IN SERVICES

User-centricity is an old idea, presented already in the late 1970s by innovation economists (Nelson and Winter, 1977) and in the early 1980s by service marketing researchers (Grönroos, 1982). Traditionally,

users have been considered important as the source of needs-based information, and more broadly, as transmitters of signals about future developments. Consequently, information about the opinions and behavior of users has been actively gathered for securing the service quality and for improving the services. Service encounters as a situation that provides real-time feedback and versatile ideas for the development have been emphasized (Engen, 2016). The elaboration of information into deeper user understanding has also been highlighted. This means that the raw information is structured, interpreted and shared within the provider organization to make it applicable. Achieving a shared understanding on the meanings and implications of user information is often more demanding than the gathering process as such; however, its significance from the viewpoints of both practice and strategy has been pointed out (Nordlund, 2009).

The contextual and dynamic nature of using services is a phenomenon that many researchers have highlighted. For instance, researchers examining the experiential side of services have pointed out the significance of social networks as the framework for experiences (Payne *et al.*, 2008). An important characteristic of experience is its holistic nature: the service and its tangible elements together create the overall user experience. The experiential approach reveals an aspect which other approaches have ignored – novelties are not perceived similarly by different actors. There are novelties that service providers define as innovations, but which users do not regard as useful novelties from their own viewpoint (Helkkula and Holopainen, 2011).

This perception has led to the engagement of users in development and innovation processes. In this way, developers can – at least to some extent – take the perspective of the users, and not only ‘become informed’ about it (Hasu, 2001). Users can be involved as informants, as active co-creators and as a prototype-test population, for example (Alam and Perry, 2002). A central question is who, when and how should be involved. There are approaches that highlight interaction with users in the early stages of innovation; other approaches emphasize the importance of the transition from development to implementation (Hasu, 2001; Sundbo and Toivonen, 2011).

There are some theoretical approaches that have discussed the prerequisites of user-based innovations in more detail. According to Sørensen *et al.*

(2013), the emergence of innovations in the service encounter is dependent on two factors: the organizational support system and innovation-friendly atmosphere. In the support system, confidence, correspondence capability, and decision capability are essential. Confidence means the trust of the management in the front-line employees. Correspondence capability includes suitable communication channels and low hierarchy so that the ideas of users flow freely. Decision capability is needed in the selection of ideas for further development and dissemination. Issues linked to the atmosphere consist of user-appreciating values, social intelligence, and the recognition of important ideas. Values should support genuine will to solve users' problems. Social intelligence is needed to observe and take seriously the needs of users. Recognition includes feedback regarding the 'destiny' of the ideas emerging in the service encounter.

The interaction between the service provider and the user usually include a mutual learning process: the provider learns about various use contexts and the user learns about ways to fulfil his or her needs. As learning and innovation are closely linked, the interaction provides fruitful conditions for the continuous emergence of incremental innovations. Shared experience of the target of development is a central element in the learning process, and several researchers have suggested that its generation should be particularly fostered (Engvall *et al.*, 2001). It is a purposeful approach on the unsecure path of innovation towards an outcome whose details are not known beforehand. In this kind of a situation, real-time feedback and interpretation as well as rapidly building intuition and flexibility are more efficient than a process with pre-planned goals. The fact that a great part of knowledge is in a tacit form further highlights the significance of shared experience (Read *et al.*, 2009).

Service-dominant logic (S-D logic) analyzes service and service innovation as a phenomenon of value co-creation and highlights the role of the user ('the beneficiary') in the 'finalization' of use value. Its basic argument is that value is not inherent in the outcomes of production and innovation but manifests itself only in use. Before the value can be realized, the input from a single provider has to be integrated with other resources. Thus, the phenomenon of resource integration is pivotal: the value of a resource is dependent on its relation to other resources. The usefulness of any particular resource from one source is moderated by



the availability of other resources from the other sources, the removal of resistances to resource utilization, and the beneficiary's ability to integrate them (Lusch *et al.*, 2010; Vargo and Lusch, 2011).

The significance of resource integration implies that, while the role of the beneficiary is central, value creation does not take place through the activities of a single actor, neither is it restricted to the dyad between a provider and a user. As soon as the resources available to actors are carefully analyzed, it turns out that it is necessary to transfer the view from the focal actors to a broader context. A full range of actors provide resources and simultaneously act as resource integrators themselves (Vargo and Lusch, 2011, 2016). In line with the innovation systems research (Lundvall, 1992; Nelson and Nelson, 2002), S-D logic highlights that instead of focusing on one entity acting on the other, the focus should be on dynamic systems in which value is co-created – on the actions and interactions of multiple actors integrating, exchanging and applying resources (Chandler and Vargo, 2011; Ramirez, 1999).

#### 1.2. BROADENING THE VIEW TO MULTI-ACTOR RESOURCE INTEGRATION

There are many theoretical approaches that have highlighted the importance of resources, but usually they have concentrated only on the provider organization (*e.g.* the resource-based view by Teece *et al.*, 1997). Another problem is the focus on the ownership of resources, not on their mobilization and use. In this area, S-D logic has provided an important contribution by synthesizing views from the sociological structuration theory (Giddens, 1984) and institutional theory (Scott, 1987, 1995). The starting point is the argument that 'resources are not, but become' (Vargo and Lusch, 2004). A resource status of an object or human skill depends on a disposition to being utilized for an intended activity (Peters *et al.*, 2014).

The focus on multiple actors in the provision and integration of resources brings to the fore the importance of networks. Networks are not just aggregations of relationships, but dynamic systems whose critical characteristic is self-adjustment: they are simultaneously functioning and reconfiguring themselves (Vargo and Lusch, 2011). In other words, while the actors co-create value, they at the same time jointly provide the context through which value gains its collective and individual

assessment (*cf.* Giddens, 1984). Each integration or application of resources changes the nature of the network in some way (Wieland *et al.*, 2016). Thus, resource integration is an emergent process, including a series of interaction-based dynamics (Peters *et al.*, 2014). Novel properties resulting from resource integration cannot be reduced to any particular action or relationship but the overall relations and interactions forming the whole allow them to emerge (McColl-Kennedy *et al.*, 2012).

In the practices of resource integration, central topics are both the role of human agency and the role of technology (Kleinaltenkamp *et al.*, 2012). Today, technology is increasingly important in the resource integration process, and the role of people interacting with technology is a key issue (Maglio and Spohrer, 2008). Also the human and social experience resulting from the interaction with engagement platforms is crucial (Ramaswamy, 2010). Further, it is interesting whether technology can be regarded – not only as resource – but also as a resource integrator forging relationships between things with knowledge capabilities (Kleinaltenkamp *et al.*, 2012).

When the focus of resource integration is moved from the dyad of the provider and user to the broader context of multi-actor value creation, the issue of coordination becomes important. S-D logic argues that in this wider configuration of actors, institutions play a crucial role: they facilitate resource integration and enable the coordination of value-creating activities (Vargo and Lusch, 2016). Institutions manifest themselves in many forms; they can be formal codified laws, informal social norms, conventions, such as conceptual and symbolic meanings, or any other routinized rubric that provides a shortcut to cognition, communication, and judgment. In practice, they typically exist as part of more comprehensive institutional arrangements – interdependent sets of institutions (Scott, 1995; Seo and Creed, 2002).

The process of institutionalization and the shaping of institutional arrangements are core phenomena in the coordination of multi-actor value creation. Institutionalization can be defined as the change, disruption and maintenance of institutions. It is worth noticing that several institutional elements have to be maintained also in the context of renewal (Scott, 1987; Seo and Creed, 2002). The process of institutionalization is characterized by the continuous exchange, interpretation, integration and application of knowledge among multiple actors. It

includes collective evolution that leads to the generation of new, useful knowledge. Changes in the operational environment are driven by and drive this co-creation (Vargo *et al.*, 2015).

Institutional work is the concrete way to make the institutionalization happen. The concept has been introduced by Lawrence and Suddaby (2006) to describe how actors build, sustain and change institutions; and how they translate, interpret, modify, and accommodate institutional arrangements. Institutional work focuses attention – not on the structures – but on the processes; it transfers the view from the institution itself to the purposive action. A central question is how actors become motivated and enabled to change the taken-for-granted practices and norms of the institution they are involved in. Decision making, sense making and collective mobilization have been suggested as the key issues here (Thornton *et al.*, 2012).

The concept of institutional work has similarities with practice-based views on organizations. Practice refers to activity patterns that are infused with broader meaning and provide tools for ordering social life and activity; it includes material and cognitive activities that are evolved and shaped by the broader cultural framework (Engeström, 2007; Lounsbury and Crumley, 2007). The recent discussion about the ‘practice-turn’ aims to connect the micro-level of individual activities with the meso-level of organizations and with the macro-level of the broader institutional field (Suddaby *et al.*, 2013). Institutions can be understood as the practices that have the greatest time-space extension (Vargo and Lusch, 2016).

Summarizing, ‘zooming out’ beyond dyadic service encounters to the broader context is beneficial not only for the advancement of research, but it has practical implications: through this kind of an approach, the role of single actors and activities can be understood as a part of the whole. On the other hand, ‘zooming in’ is also essential: it focuses on investigating the particular actions and interactions that underlie and drive both the maintenance and change of this broader context (Wieland *et al.*, 2016). The institutional view provides a practical perspective for viewing and understanding continuous and discontinuous innovation. It sheds light on how innovation is intertwined with the changing and building of institutions: deinstitutionalization and re-institutionalization (Vargo and Lusch, 2016).

## II. EMPIRICAL CONTEXT AND METHODOLOGY

### II.1. CONTEXT OF THE STUDY

As mentioned in the introduction, our empirical research took place in the city of Vantaa – a city belonging to the Helsinki metropolitan region. While implementing the nation-wide renewal towards integrative education, the management of day care and education in this city also wanted to promote collaboration between sub-sectors of its administrative area, focusing particularly on the collaboration between preschools and libraries. The contents of the collaboration were quite open; in addition to the implementation of integrative education, only the utilization of the opportunities of digitalization was defined as a goal.

The suburbs testing the collaboration were selected on a voluntary basis. After preliminary negotiations between local actors and the managers of day care and education, the libraries in three suburbs and one preschool in each of them expressed willingness to establish a half-year project for the collaboration purpose. In our study, we call these dyads case A, B and C. Case A represents an old suburban area, case B the city center, and case C recently built suburban area. In all these suburbs, there is only one library but several preschools. The participating preschools work within day care homes, as usually in Finland.

The activity started from the formation of the project group and the gathering of ideas for the focus of collaboration. Already in the first meeting of the local representatives, it became clear that gaming could be a common denominator that combines the interests of both preschool teachers and library professionals. Two slogans crystallized the idea: ‘let’s play library’ and ‘preschool loves library’. Thereafter the actors in the three suburban areas developed their own applications of this basic idea.

In all areas, the preschool children developed their own game, for which they visited several times the local library to get ideas and material. The final playing of the game also took place in the library. The use of the library premises varied, however, in the gaming event. In case B, the library was used as the actual playground whereas in cases A and C, the library just provided space for gaming. The responsible party also varied: in case A, it was the local preschool participating in the project and in

case B it was the local library. In case C, the leader was the pedagogic team whose task was to develop the library functions in the whole city.

A central aim of the project was to develop a generalizable model for the collaboration between preschools and libraries. The management of daycare and education in Vantaa noted that a concrete goal is to implement this model in all suburbs of the city. The model should provide practical steps that reflect the adoption of principles of the nation-wide educational renewal and the city's own emphasis on broadening the functions of libraries. The library's future role was seen to include acting as a central node and pedagogical support in suburban communities. After the finalization of the project in the three suburban areas, the project group developed a suggestion for this kind of a model and presented it to the deputy mayor and other managers responsible for day care and education in the Vantaa city.

## II.2. DATA COLLECTION AND ANALYSIS

The first method to acquire our research material was 10 observation sessions in one of the three preschools and in the library which was its collaboration partner (case A). We observed the development of the children's own game, which started from mapping the children's interests and voting the theme, continued to the actual game design, and ended with the gaming event and the celebration of the achievement.

In the observations (as well as in the interviews described below), we paid particular attention to sensitivity and ethical issues highlighted in methodological guide books for studying young children (O'Reilly and Dogra, 2017). In our case, the children were six years old and had just started the preschool (In Finland, this is the age to enter the preschool). Signed permissions from the parents were acquired. When introducing the project to children, the responsible preschool teacher told about the study that is part of the activity and presented our role as the researchers.

Our observation method was participatory, including the sub-types of both moderate and active participation. Moderate participation means that the researcher is present at the scene of action and is identifiable as a researcher, but does not actively participate or only occasionally interacts with people in it. Active participation means that the researcher engages in almost everything that people are doing in order to integrate with the phenomenon, but continues to record observations in field notes and

adopt an analytical stance at least partially during the participation and more completely after the participation (DeWalt and DeWalt, 2011). The selection between these types of participation depended on the situation: we avoided to disturb children's activities but participated when it was natural and useful. For instance, we did not participate in theme voting, but helped children to find material in the library.

The material was supplemented with 10 interviews of preschool teachers and library professionals; they represented all pilot organizations, and most of them were members in the project group. We also interviewed the manager of the day care home in which we made observations, and the manager of the library which was its collaboration partner. Further, we interviewed the pedagogic ICT expert who coordinates the planning and use of ICT technologies in pre-primary education in the city and who was the leader of the whole project. The interviews were semi-structured: the topics were decided beforehand, but within them the respondents were given a great deal of freedom (Bryman and Bell, 2011). Besides the data about the disciplinary backgrounds and professional tasks of the respondents, the topics included information about their role and experiences during the project. Particular successes and challenges as well as the future application possibilities of the pre-school-library collaboration were also mapped. The interview sessions lasted from one to one and half hour.

Furthermore, we interviewed 6 children in the preschool where we observed the project. The responsible teacher selected the sample. The interviews took place in pairs which enabled discussion between the respondents and created a familiar feeling. The style of the questions was open to secure a genuine listening of the children's voice (Flewitt, 2014): we just asked the children to tell about the game development, the use of library and other aspects linked to the project. The children were very eager to describe their experiences. Because they already knew us based on the observation period, we needed not to separately motivate them – the interviews were a natural continuation of the project. The half an hour time planned for the interviews was regularly overrun; the approximate length was one hour.

Finally, we participated in 7 model development workshops and in a meeting in which the model was presented to the education administration of the city. In these workshops, our role represented mainly

moderate participation (DeWalt and DeWalt, 2011). We occasionally commented the elements of the model based on our observations and interviews. For instance, we pointed out successes that could encourage the upscaling of project results and raised issues that seemed to be important prerequisites for collaboration. We also made a presentation of our findings in an interim evaluation workshop organized by the ‘umbrella project’ which our study was part of.

The observations of the game design took place between September and November 2016; the interviews between November 2016 and April 2017, and the observations of the model development between November 2016 and March 2017. Both researchers (the authors of this paper) were present in most observation and interview sessions, which was important from the viewpoint of reliability (Arksey and Knight, 1999). The interviews of adults were recorded and transcribed, but in the interviews of children we decided to use hand notes in order to maintain relaxing atmosphere (*cf.* O’Reilly and Dogra, 2017). The observation material consists of field diaries and photos. We did not use any computer-assisted coding tool in the analysis and interpretation of the data, but several rounds of analysis were carried out to derive meanings from data and to reduce the amount of data (Huberman and Miles, 1994). While reading the interviews and the documentary material, we aimed at creating a holistic, systematic and thorough understanding of the research topic.

### III. RESEARCH RESULTS

In this section, we start by presenting the results that we gained by studying the implementation of the preschool-library collaboration in case A, in which we carried out both participatory observation and interviews of adults and children. The first sub-section includes the description of actual pilot process based on our observations. In the second sub-section, we report the experiences of participants based on the interviews of both children and the adults in case A. Thereafter we present supplementary viewpoints from cases B and C, in which we only carried out interviews. The third sub-section describes the development

of the model: the process, the outcome and the aspects that the project group highlighted in its implementation.

### III.1. THE PROCESS OF THE COLLABORATIVE GAMING PILOT

As mentioned above, the collaboration pilot was led by the preschool in case A. The teacher responsible for the pilot was well versed in the principles of integrative education and enthusiastic to implement it. The ideas of engaging children's own initiative and broadening the learning environments outside the walls of the preschool were clearly visible in her activities. As she was also knowledgeable in project work, the development of the children's own game was structured via clear milestones right from the start and 'project vocabulary' was regularly used. Meetings in which children acted as a chair and a secretary were held. The milestones were drawn on a 'flow chart' that was all the time visible to the children so that they could see which activities had been finished, what was currently going on and which were the next steps.

Based on the commonly accepted idea that gaming would be the core contents in the collaboration pilot, the preschool and library representatives (adults) in case A had a kick-off session in which concrete steps for the process were planned. The process included activities that were carried out within the preschool and activities in which children visited the library or the library professionals visited the preschool. The activities within the preschool started from mapping the interests of the children. They made drawings that were labelled according to themes, and collected together into an 'exhibition'. The most popular themes were selected by voting and were combined into one common theme: nature. Thus, the project and the game to be planned was named 'Explorers of Nature'. The children themselves played a central role in the early stages of interest mapping; more facilitation from the responsible teacher was needed in the selection of the unifying theme and in its naming. Library professionals supported the ideation of the theme by visiting the preschool and loaning books.

As a background stimulation for the development of their own game, the children were guided to familiarize themselves in the multiple possibilities of gaming. Both traditional games (board games, outdoor games etc.) and digital games were played. At this stage, the children and teachers made the first visit to the library, which provided a broader



repertoire of traditional games and particularly the opportunity to play digital games. The first sketches for the own game were made during this visit. Based on the suggestion of the responsible teacher, the game consisted of task points that the children designed in pairs. Eight task points were ideated, and in the end of the library visit, they were presented in a common group session. The task points included adventure themes (surviving in the era of dinosaurs), animal themes (comparing the brain sizes of different animals) and experience themes (identifying different aromas), among others. All themes were linked to exploring the nature.

The pairs continued the design of the task points in the preschool. In some cases, the end result was a board game type solution that also included features of digital games (which, however, could not be realized in this context). In others, the game included some physical activities to be done. The actual playing event was organized in the library as a path on which the children moved from one task point to the next. The adults from both the preschool and the library supported the activity so that sufficient structure was maintained. As the final step in the project, the achievement was celebrated in a 'party' which was again organized in the library and in which the children received diplomas to memorize the successful achievement.

### III.2. EXPERIENCES OF THE CHILDREN AND THE ADULTS

The interviews of the children revealed that they liked the project very much. Playing some parts of the game had continued in the preschool after the playing event, and some children had played their 'game' (task point) at home, too. In a few cases, the development of the 'game' had also continued. The developers of the adventure task point with dinosaurs had ambitious plans:

We have added new elements to our game and played it in the preschool. In the future, this game can be played with a computer, with a mobile phone, with a play station and with an iPad ... but it can also be a game with task points and be played in a library. And in the future, playing this game can last many days... (A boy who had participated in the development of 'the dinosaur game')

The interviewed children appreciated most those task points that provided new insights (the brain task in particular). Memory games

and puzzles were considered too easy and usual. A problem raised by the children was a short time devoted to playing; it allowed only one round and some children even had to skip some task points. In the preparation of the game, all interviewees mentioned theme voting as an especially nice activity: 'a good point is that 'you can select what you want, and even if it is not the final selection, you need not to be disappointed because next time there can be your turn.' The importance of rules was well understood; the interviewees had noticed that some children explained carefully the rules of their own 'game' in the playing event, while others were not skillful in it. As regards their own case, they had experienced it easy to formulate the rules and tell about them to other children:

It was nice and easy to tell about our own game to the others. You cannot play games if nobody has told you the rules. (A girl who had participated in the development of 'the aroma game')

As regards the place for gaming, libraries were regarded as a suitable environment, because 'there is silent and only a few people'. If a game is built in a room, a library was thought to be much better than a daycare home. However, the children highlighted that many different spaces and places could be used for playing and gaming. Finally, they stated that it would be interesting to visit other preschools and see which kinds of games they have developed.

The interviews of the adults revealed that the project had been a positive experience. The participants in case A highlighted the enthusiasm and commitment of the preschool teacher who was responsible for the project. According to one interviewee, 'she was living and breathing the project' and was an example of the leader characteristics needed in a project that includes much insecurity, even chaos. A leader with passion also draws the others to a novel way of working. Even though not all professionals in case A were fully engaged in the beginning, the interviewees expected that they become motivated step by step when the new practices become established. The manager of the day care home noted that changes have already been clearly visible in the everyday educational work: children's initiatives and theme-based learning are appreciated. Interests and ideas are gathered from children both in specific sessions and continuously via observations of their everyday activities; children

also spontaneously tell about their interests. The manager considered that the first year of new practices means experimenting and everything need not to be ideal. The following year should show a more systematic implementation of the renewal.

As regards the collaboration between the preschool and the library in case A, both parties highlighted the skills and knowledge of their partner. The preschool representatives considered libraries to be natural collaborators in a pilot that concentrates on theme-based learning, because the core task of the library is identifying the relevant knowledge material and presenting it to the users. The manager of the day care home in which preschool A works described the benefits of collaboration as follows:

The project was a useful remind about the know-how that can be found in the libraries. This know-how and the related service should be acknowledged better in pre-primary education as it diminishes the educational workload: pieces of knowledge are sought and gathered by professionals who have the best expertise for this activity. (Manager of the day care home including preschool A)

Preschool representatives mentioned that the local library has earlier been unfamiliar both to children and to many professionals. The pilot has made visible those many opportunities that the library can offer, and via the children, information of these opportunities spreads to families. Interaction between the professionals has also been essential, because there are many employees in the preschool who do not know the broad skills and deep expertise of librarians. The preschool representatives also considered that cross-professional collaboration could include other partners besides the library – the library should, however, be kept aware of broader partnering efforts.

The interviewee representing the case A library highlighted that services to school children are a central part of the library work in the Vantaa city – the establishment of the pedagogic team illustrates the importance of this work. There is also a specific service promise that focuses on the collaboration with schools. However, the interviewee told that the collaboration has been provider-centric and strictly planned: a specific age group comes to the library in a specific time and activities during the visit are led by the professionals. In the pilot project, the new element was the engagement of children in the planning of activities.

From the viewpoint of the library, the pilot in case A was genuinely directed by the interests of the children. The resource problems prevented a deeper involvement of the library in the lead of project, but the approach of the preschool was highly appreciated as seen in the following quote:

Children's participation is an important lesson that should be brought to the library's everyday work: how to better listen the children and to plan one's own work based on that. (A member of the libraries' pedagogic team in Vantaa, the contact person for the pilot project in the case A library)

The interviewees also commented the contents of the pilot project. The representative of the case A library regarded gaming as an important part of library service. According to her, collaboration between libraries and preschools has been emerging in the Vantaa city also outside the pilot project, and this collaboration has focused on educational gaming, *i.e.* on the inclusion of pedagogic aims in gaming. This means that playing ready-made games is not enough, but the role of children should be more active. Educational gaming could also be used for the search of knowledge.

Supplementary interviews in cases B and C brought up similar views. The respondents highlighted that game-based thinking is natural to children. They do not separate between traditional and digital games but combine physical and virtual dimensions and sensory and functional elements. Step by step, they learn how various tools fit various specific situations. Thus, it is possible to develop game-based thinking in many different ways – these ways are not linked to some specific tools (which is an important point in the circumstances of the scarce resources). In case B, teaching the rules of games had been consciously used for the promotion of children's logical thinking. These rules had also been compared with the rules of everyday activities and social interaction, pursuing in this way more general applicability. In mutual interaction, and via some specific activities like voting, children learn 'citizen skills' and realize that things do not always go in line with one's own will. They learn to make compromises and select a common decision. The interviewees emphasized that when the emergence of common decisions is made transparent, children get means for self-expression and for the experience of participation.

Even though general experience of the project was positive, there were also challenges. One of the basic issues was the lack of information in the early stages of the project. Not all participants were aware what the idea of the pilot was and how extensive the project would be. According to one library representative, ‘the frames of the exercise were unclear’ – it would have been beneficial if the time scale and goals had been better informed. More detailed advice concerning the expectations would have been necessary because the collaboration and its contents were new to most participants. The following quote illustrates these challenges:

In the beginning, there was much discussion about the goals: digitalization, gaming, developing the participation of children ... There were many ideas and a request from the initiators: do something linked to these... Together with the collaborating preschool teacher, we tried to interpret what was wanted, what it could mean and which goal we should primarily pursue – we decided to select game-based activity. (A librarian participating in case B)

A unanimous opinion of the participants was that the framework conditions of the project were derived from the needs of preschools – the libraries were more in the role of followers (despite the fact that the actual project was led by the library in case B and the pedagogic team of the libraries in case C). Thus, finding a balance in the benefits that this kind of a project provides to the participating organizations was emphasized as an important starting point for the development of the scalable model.

According to the interviewees, also the resources that the organizations can allocate to the exercise should be considered, taking into account whether the exercise is embedded in everyday work (like in the pilot preschools) or whether it is an extra activity (like in the pilot libraries). Even though the participating libraries are developing ‘open doors’ for groups, they experienced that the pilot project was too intensive to be carried out regularly. Consequently, the model should provide several alternatives between which the participants could select according to their concrete situation. The resources vary, not only in libraries, but also in preschools; the composition of the child group being one influencing factor. (The group may consist of children that know each other because they continue in the same day care home or the group may be totally new and require more attention to become compact.)

### III.3. DEVELOPMENT OF A SCALABLE MODEL FOR INTEGRATIVE EDUCATION

As previously mentioned, the integrative education project not only piloted the new collaborative practices, but the purpose was to develop a model that could be implemented in the whole city – and possibly be upscaled later to other Finnish cities and municipalities. The model was focused on the preschool-library collaboration and on the promotion of integrative education, but broadening the contents to other topics was considered desirable as well. The project group started the compilation of the model immediately after the end of the pilot. The group consisted of the representatives of each participating preschool and library and was chaired by the pedagogic ICT expert of the city. In the first meeting, the experiences of the pilot project were discussed; the other 6 meetings were used for the concrete sketching of the model.

The core idea of the model was to describe a framework that functions as an enabler for collaboration, supports interaction, and facilitates the finding of common solutions between preschools and libraries. Based on the pilot, the participation of libraries in integrative education was considered an ideal way to broaden the learning environments. Several interviewees commented that the three preschools had been ‘privileged’, receiving many kinds of help and input from libraries during the project: space and place, games, and support for theme-based learning. The more general influence of libraries in local communities was also pointed out. A member of the libraries’ pedagogic team in Vantaa described this view as follows:

The broader role of libraries as an open space for everyone should be emphasized, too, as it supports equality and participation. The phrase: “where education fails, library comes in” includes an important message. (A member of the libraries’ pedagogic team in Vantaa)

In the model development, the project group selected a process-based description as the approach that shows concretely how a preschool and a library can collaborate and commit themselves to supporting children’s initiatives. This process-based model was characterized as a tool for explorative learning, and included two perspectives: the perspective of administration and management and the perspective of children. From the former perspective, the development of the model as such was regarded as an important learning process. From the perspective

of children, the visibility of the path was highlighted – starting from the first moment when the topic is raised to the finalization of the project. In other words, the progress of the project should be ‘physical’: the children should all the time see where they are on the path. The importance of visibility was highlighted by the leader of case A, among others. She concretized it as follows based on her own experience:

We illustrated the project path as a timeline on the preschool wall. The path was handmade together with children. It included the main steps of the process and the most crucial decisions made during it. The path concretized the stages and the length of the process to the children, and helped them to see what is currently going on. (The preschool teacher leading the project in case A)

Figure 1 illustrates the model. Its process focus corresponds to the principles of integrative education which recommends project work. Critical events form the elements of the model; their use is facilitated with specific questions linked to the events. The practical approach was considered to favor the implementation of the model.

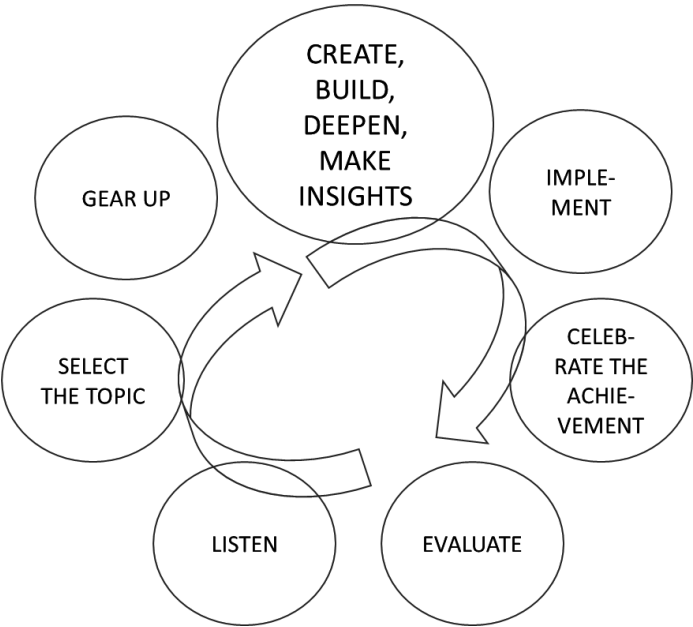


FIG. 1 – A model for preschool-library collaboration in integrative education.

The process starts in the preschool by listening the ideas and interests of children and by discussing together the aims of the project. The next step is selecting the topic; at this stage, children acquire knowledge about the targets of their interests. Voting the most popular themes also belongs to this stage. The actual collaboration between the preschool and the library begins in the stage of gearing up, which includes mutual visits: the participating preschool group visits the library and the library professionals visit the preschool. The aim of both visits is to broaden the knowledge base linked to the selected theme. The stage 'create-build-deepen-make insights' is the main stage of the process. Here, the adults stimulate and encourage the creativity of children, make their ideas visible, and help the children develop these ideas into concrete outcomes. The task of the adults also includes creating frameworks and structures, giving positive feedback, bringing successes to the forth, acquiring supplementary knowledge and applying it. Collaboration with the library should be continuous at this stage.

The implementation stage is the culmination of the project. The project group characterized it as a specific event in which the results of the project are brought into practice. According to the members of the group, it is important to decide whether the event is structured or free-form and what is its length; further, the roles of adults and children have to be defined. There are also many practicalities that have to be organized: a suitable place has to be found (the collaborating library is a natural alternative), and the audience has to be considered. In the actual event, the adults should show indulging and empathizing so that children can enjoy about their achievements. Based on the experience from the pilot, also a separate celebration event, including a diploma ceremony, was recommended. It highlights the visibility of the results and children's desires can play a central role in its planning. Finally, an evaluation stage was included in the model. Here, the whole life cycle of the project should be analyzed and the points requiring further development should be identified. Practices that enrich everyday work should be implemented as soon as possible and concrete steps for the continuation and broadening of collaboration should be ideated.

The combination of general applicability and flexibility was highlighted as the core issue in the model. The developers of the model emphasized that the model describes principles that characterize integrative



education and the broadening of learning environments. On the other, realism, tailoring, and alternatives are needed in the application of the model because operational environments and resources differ between suburbs in Vantaa, and there are even more differences if the model is disseminated in a broader scale. Differences concern both preschools and libraries. The nation-wide renewal of education was regarded as a good starting point but it was stated that not all work communities at the local level are equally ready to adopt it. The use of ICT as a pedagogic tool is also a challenge. Regarding libraries, the resource issue, which already came out during the pilot project, caused much discussion in the model building, too. It was commonly noted that active collaboration is demanding from the viewpoint of libraries, and therefore the new practices should be planned concretely: how many meetings, how often, and in which time of the year.

We also asked opinions about the model in our interviews. The respondents confirmed the above-mentioned challenge about the balance between generality and flexibility. A too rigid and formal model was regarded as a hinder to experimenting, but also excess voluntariness was judged to lead to gradual stopping of the activity. Even though the model should be modifiable, commitment should be simultaneously highlighted. According to one interviewee, commitment is best achieved when the model is understood in terms of an operational model:

The model should be understood as an operational model ... then it becomes a long-term practice. An operational model means that all stakeholders understand that we act in this way. There cannot be a discussion about whether we want to implement this. Commitment is needed even though a new practice does not feel pleasant in the beginning. It is important to identify one or two enthusiasts; the others can participate with 80%. (Manager of the day care home including preschool A)

This interviewee argued that the most topical issue is linking the operational model to the project work, which is essential in theme-based learning – this kind of learning does not take place when sitting in the table, but it is learning by doing. Another interviewee emphasized the teachers' responsibility: even though initiatives regarding learning contents come from children, the teachers plan and coordinate the whole and take care that the children genuinely learn about the topics at hand. Flexibility needed in the model derives from the central role

of children: each project gets its final shape on the basis of children's interests and it is not possible to know beforehand the exact form and contents of the project. A child-centric attitude and the ability to act flexibly are the preconditions of success in both the preschool and the library:

The model should include a clear structure which is, however, wide enough to enable imagination. We need to define carefully different stages of the process and specify the roles of different actors – especially those of the adults participating in the development. On the other hand, the time to be used cannot be fixed, but flexibility is needed to make the project fit to the interests of children and to the everyday routines of each unit. (The preschool teacher leading the project in case A)

The project group and interviewees highlighted the importance of the way in which the renewal and the preschool-library collaboration is 'marketed': there should be sufficient information with an encouraging 'spirit' and multiple channels. Both managers and shop floor professionals should be kept informed, and besides the contents, the people should become convinced that there are resources to initiate the new practices. Organizing the follow-up was also regarded as crucial. This follow-up should explore which kinds of organizations are eager to start collaboration, how they manage it, and what are the reasons of passivity in those organizations that do not participate.

## CONCLUDING DISCUSSION

Our study confirms the suggestions about the opportunities and positive prospects included in learner-centric applications in pre-primary education. It indicates that these applications work well from the viewpoint of both professionals and children. In our case, the teachers were eager to promote the goals related to integrative education and digitalization, and proficient to renew traditional educational practices in accordance with them. The ability to encourage and enable learning – instead of the linear transfer of knowledge – was central in the implementation of the new approaches. Another skill that changes the

role of professionals, but was successfully managed in our case, is the ability to combine flexibility and goal-directed projects.

As regards children, our case indicates that theme-based working is natural to them. The children were active creators of ideas and produced learning contents using their everyday experiences as sources for these contents. After the introduction by the teacher, they also quickly adopted the principles of project work and the 'project terminology'. They understood the specific length of the project, its milestones, and the common goal which requires commitment even though some decisions are not in line with one's own desires. Group situations in the game development confirmed the earlier finding that children learn together by giving stimuli to each other's thinking and imagination (De Vries *et al.*, 2002). Interaction was smooth, without conflicts. The situational factors may, however, explain part of this perception: we examined only the activity taking place in the game project, which was very intensive and favored collaborative atmosphere. There may have been more tensions and other non-smooth behavior during the day, which we did not observe.

While our study provides an interesting case example about the implementation of integrative education in preschools, its specific purpose was to link a service perspective to educational research. Our theoretical review and empirical material show that many aspects in the renewal of education correspond to the discussion of user-centricity in service research, including the research into renewal and innovation. An especially interesting analysis is provided by Sørensen *et al.* (2013) who focus on the prerequisites of success in innovations that emerge from the user-producer interaction (service encounter). Both the organizational support and the innovation-friendly atmosphere suggested by the authors were identifiable in our case. Strong positive elements were confidence in the grassroots-level working, free flow of ideas, and a genuine will to answer the needs of users and solve their problems. The most apparent problem was linked to the functioning of the information channels: the time scale and goals of the pilot were not sufficiently informed to all professional participants.

Our case also shows decision capability and recognition that Sørensen *et al.* (2013) consider important for the further development of ideas and the spread of novelties. Right from the start, the management of the

pilot decided that the results will be summarized into a model which is generalizable at least in the collaboration of preschools and libraries, possibly also more extensively in collaborative public services. The development of this model was carried out within a few months after the end of the pilot. From the viewpoint of recognition, an important step was the presentation of the model to the deputy mayor responsible for education and daycare in the case city. Her acceptance and willingness to implement the model provides prospects for its further application in the city.

Possibilities of even broader spread were visible, too. The collaborative gaming pilot and our empirical study were presented in an evaluation workshop organized by the umbrella project 'Service revolution – people to the center in digitalization'. The workshop was targeted to the researchers, practitioners, external advisors and financiers of this bigger project, within which several pilots focused on the development of public services. In the evaluation of the value and impacts of the pilots, a multi-criteria framework (Djellal and Galloway, 2013; Hyytinen 2017) was applied. Besides traditional techno-economic characteristics, this framework makes visible human and societal values of the phenomenon evaluated. In our case, it brought up the multiple benefits of the collaboration linked to integrative education. The external advisors stated that the model developed in the project is worthy to be scaled up nationally.

During recent years, increasing attention has been paid to the central role of users and to the context within which using takes place (Payne *et al.*, 2008; Sundbo and Toivonen, 2011). From the viewpoint of our study, the argument about resource integration as the core phenomenon in value creation is particularly important (Vargo and Lusch, 2016). The game development project would not have succeeded via children's activity or via teachers' activity only, but both were needed. The integration of resources of preschools and libraries was beneficial to all stakeholders: it extended the learning environment of the preschools, providing concrete means to create a new type of service model which corresponds to the educational goals. It increased awareness of the multiple services that libraries offer, highlighting the role of libraries as an 'adventurous' place for children, and more broadly, as an open space for the community.

Even though our case study took place in the public context, its implications on the prospects of learner-centric education are not contextually restricted. Some observations are, however, especially important from the viewpoint of public services. For the city administration, the preschool-library collaboration was a means to tackle the challenge of shrinking budgets. An important perception in our study was that even though the conditions of scarce resources were well known, they were not raised as an issue in the discussions of the participants of the pilot. On the contrary, the prevalent characteristic of the pilot was an atmosphere of learning and innovation. Novel ideas were welcomed in both the preschools and the libraries and used to self-adjustment (cf. Seo and Creed, 2002). This self-adjustment was manifested, for instance, in the recombination of service packages and in the plans to strengthen the role of the pedagogic team in the libraries.

Our case reflects a core feature of self-adjusting organizations: they are simultaneously functioning and reconfiguring themselves (Giddens 1984; Vargo and Lusch, 2011). This way of developing and innovating questions the traditional view which presupposes that planning always precedes action. The pilot that we examined did not follow a strong pre-planning but a process in which flexibility based on shared experience was crucial: the central role of children's initiatives meant that the steps taken were continuously adjusted and modified. While the teachers showed the ability to elicit out tacit knowledge of children, and interpret and use intuition in changing situations, they also invested in maintaining enough structure so that the project progressed and finally achieved the goal set (cf. Read *et al.*, 2009).

Today, the importance of technology as a resource is continuously growing. The game development in our study revealed the children's readiness and willingness to combine the material and virtual worlds. Thus, the digitalization of teaching should not be handled as a separate issue, as it is often done, but it should be considered embedded in the thoughts and acts of the new generation. The role of technology as an engagement platform (Ramaswamy, 2010) was very clear in the activity of the children, but it did not differ in this respect from the role of books or material tools.

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