

na tem področju, kar je bilo opaziti po predstavitev rezultatov v Innsbrucku in Supetru. Rezultati raziskave bodo tako pripomogli k optimizaciji MRT. To pa bo vodilo k bolj realnemu ugotavljanju prostorske predstave.

KLJUČNE BESEDE

prostorska predstava, test miselne rotacije

field. This was observed after the presentation in Innsbruck and Supetar. The survey results will also help to optimize the MRT. This will lead to a more real determining of spatial ability.

KEY WORDS

spatial ability, mental rotation test

Slika 10: Rezultati ustreznosti normalni porazdelitvi pri starem in novem sistemu točkovanja.

Figure 10: Normality test by χ^2 distribution at old and new scoring system.

Group of students	Old scoring system		New scoring system	
	Computed χ^2 statistic	Answer to H_0 (at 95% $\chi^2 \approx 52.19$)	Computed χ^2 statistic	Answer to H_0 (at 95% $\chi^2 \approx 52.19$)
Overall – Ybl Faculty of SzLU	71.23	NO	35.50	YES
Men – Ybl Faculty of SzLU	73.25	NO	69.90	NO
Women – Ybl Faculty of SzLU	35.81	NO	20.42	YES
Overall – UL FA	74.61	NO	46.50	YES
Men – UL FA	55.48	NO	47.99	YES
Women – UL FA	68.99	YES	34.37	YES

Matevž Juvančič

DIALOG IN IZOBRAŽEVANJE O PROSTORSKIH TRAJNOSTNIH VPRAŠANJIH V ARHITEKTURI IN URBANIZMU

DIALOGUE AND EDUCATION ABOUT SPATIAL SUSTAINABLE ISSUES IN ARCHITECTURE AND URBAN DESIGN

POVZETEK

Na področju dialoga in izobraževanja o trajnostnem prostorskem razvoju v arhitekturi in urbanizmu, gre izpostaviti nekaj raziskav in iz njih izhajajočih prispevkov ki so v zadnjem času obravnavale med-disciplinarno in medgeneracijsko sodelovanje v procesu oblikovanja prostora. Pri vprašanih vzgoje za trajnostni prostorski razvoj, nas je zanimalo predvsem, kako mlajše generacije razumejo ta pojem in kaj si pod njim predstavljajo, saj slednje postavlja temeljna izhodišča za nadaljnje delovanje na tem področju. Študija [Svetina et al., 2013] prinaša interdisciplinarni pristop k preučevanju razumevanja trajnostnega razvoja grajenih okolij s strani otrok in mladostnikov. Koncept trajnosti implicira zapletene odnose med etičnimi, ekonomskimi, socialnimi, tehničnimi in drugimi lastnostmi. Koncept je težko razumljiv za otroke, ki še nimajo razvitih sposobnosti abstraktnega in večdimenzionalnega mišljenja. Za preverjanje razumevanja trajnostnih konceptov s strani otrok in adolescentov smo razvili in uporabili metodo vizualnega jezika in jo aplicirali na vzorcu preko 2000 sodelujočih, starih od 6 do 19 let. Vsesplošno razumevanje in interpretacijo prostorskih informacij o urbanih okoljih je obravnavalo več prispevkov, ki so se ukvarjali z uvajanjem novega pristopa k razumevanju kompleksnih informacij in delovanja urbanih prostorov s strani ne-strokovne javnosti. Verovšek, Juvančič in Zupančič [2013a] opisujejo koncept modela za interpretacijo kvalitet urbanih prostorov. Cilji modela so trije: prvič, oblikovanje enotnih, veljavnih in uporabnih metod, za ocenjevanje značilnosti oblikovanja prostora; drugič, navesti razvojne lastnosti prostorov, ki bistveno vplivajo na uporabnikovo izkušnjo, ki - kot posledica - izhaja iz preudarnih oblikovalskih rešitev ali pomanjkljivega urbanističnega oblikovanja; tretjič, razviti generični jezik vizualne predstavljivosti urbanih prostorov za komunikacijske namene (slika 10). Model predstavlja identifikacijsko metodo in je namenjen prepoznavanju ključnih informacij oziroma 'zgodbe',

SUMMARY

Several recent studies and scientific contributions have addressed the dialog methods and education in sustainable spatial development in architecture and urbanism, which at the same time also dealt with interdisciplinary and inter-generation communications and lifelong learning on the process of urban design. For education purposes on the topic of sustainable spatial development, we were interested in how the younger generations come to understand this notion. This fundamental understanding will direct further efforts in that segment. The study [Svetina et al, 2013] provides an interdisciplinary account determining how children and adolescents understand urban and architectural aspects of sustainable development. The concept of sustainability implies complex relations between ethical, economic, social, technical and other qualities of our environment. The concept is difficult to understand for children who lack the abilities of abstract reasoning and multi-dimensional thinking. A new measure of sustainability understanding was formed based on pictorial rather than textual format and was applied to a large sample of over 2000 participants aged 6–19 years. The general understanding and interpretation of spatial information on urban environments were addressed by several contributions, which dealt with a novel approach to understanding the complex information and logics of urban spaces by the non-expert public. Verovšek, Juvančič in Zupančič [2013a] propose a model for interpretation of qualities in urban space. The objectives are threefold: first, to form common, valid and applicable measures to assess features of space design, second, to indicate the developmental trait that considerably affect user's spatial experience which – taken as a consequence – derives from either sustainable/prudent or poor design decisions; and third, to generically recreate and visually represent urban spaces for communicative purposes (figure 4).

ki je del določene prostorske danosti. Izbrani izsledki študije so opisani tudi v Verovšek, Juvančič in Zupančič [2013b]. Model sledi izvorni ideji izobraževalnega vmesnika za širšo javnost, ki je udeležena v procesu prostorskega soodločanja, s katerim se je podrobneje ukvarjala doktorska disertacija z naslovom Sistem vizualnih digitalnih orodij za participacijo splošne javnosti pri prostorskem načrtovanju [Jutraž, 2013] pod mentorstvom prof. dr. T. Zupančič.

UPORABNOST REZULTATOV (teoretična, praktična)

Medtem, ko je bil poudarek predvsem na raziskovanju metod dialoga in izobraževanja o trajnostnem prostorskem razvoju v arhitekturi in urbanizmu, pričujoče raziskave posredno prispevajo tudi k rasti prostorsko-kulturne ozaveščenosti prebivalstva, ki dolgoročno prispeva k razvoju sodobnih konceptov arhitekture in urbanizma, vezanih na specifično arhitekturnega prostora in kulturno dediščino v Sloveniji. Od novih teoretičnih dognanj nas rezultati usmerjajo tudi k povsem praktičnim implikacijam, kako nagovarjati posebne starostne, interesne ali drug podobno grupirane podskupine v procesu arhitekturnega in prostorskega načrtovanja. Na primer: raziskava z mladostniki je pokazala, da se razumevanje trajnostnih problematik povečuje s starostjo, zlasti pri mladostnikih, ki živijo oziroma izvirajo v urbanih okoljih. V raziskavi o razumevanju in interpretaciji prostorskih informacij smo dopolnili védenje o tem, kateri elementi prostora so kot nosilci pomena v svoji izkustveni obliki močnejši od drugih, kako generični smejo biti po svoji obliki, kdaj je pozornost gledalca smiselno usmerjati postopno in v katerih točkah in kakšnih okoliščinah je izkustveni vidik prostorskega sporočila smiselno dopolniti ali celo nadomestiti z bolj strnjeno obliko sporočanja. Nova znanja bodo pripomogla, da bodo slikovna gradiva pripravljena tako, da bodo predstavitev sporočilnostno učinkovitejše in hkrati racionalnejše za pripravo v danih okoliščinah.

KLJUČNE BESEDE

trajnostni prostorski razvoj, arhitektura, urbanizem, otroci, ne-strokovna javnost, sporazumevanje, izobraževanje, interpretacija, participacija

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The model represents an identification method and is intended as a pragmatic instrument for recognizing crucial information, narrative, embedded in spatial scene. The selected results are described also in Verovšek, Juvančič in Zupančič [2013b]. The model is following the initial idea for an educational digital interface for the general public, participating in the process of urban decision-making, which was later addressed by a doctoral thesis [Jutraž, 2013] under the mentorship of prof. dr. T. Zupančič.

ISSUES AND THEIR SIGNIFICANCE

While the research efforts primarily focused on methods and education in sustainable spatial development in architecture and urbanism, the presented studies indirectly contribute to the growth of the spatio-cultural awareness of the inhabitants, which in the long term contribute to the development of sustainable concepts of architecture and urban design in relation to the specific of Slovene architecture and protection of architectural and cultural heritage. From new theoretical findings the results also direct us to the practical implications of how to address special age, interest and other sub-groups in the architectural and urban design process.

For example: the results of the youths study indicated that understanding of sustainability issues increased progressively with age, particularly with adolescents from urban environments. The study on understanding and interpretation of spatial information has added to existing knowledge by ascertaining which elements in space are stronger information carriers than others, how generic they may be, when it makes sense to guide the viewer's attention sequentially, and when and where is it suitable to add to the experiential expression or even replace it with a more compact, abstract form of communication. The gained insights will assist in preparing visual materials in a more effective and economical way under specific circumstances.

KEY WORDS

sustainable spatial development, architecture, urban design, children, non-experts, communication, education, interpretation, participation